JetBox 9300/9310

User Manual

Web UI & CLI

www.korenix.com

0.0.6

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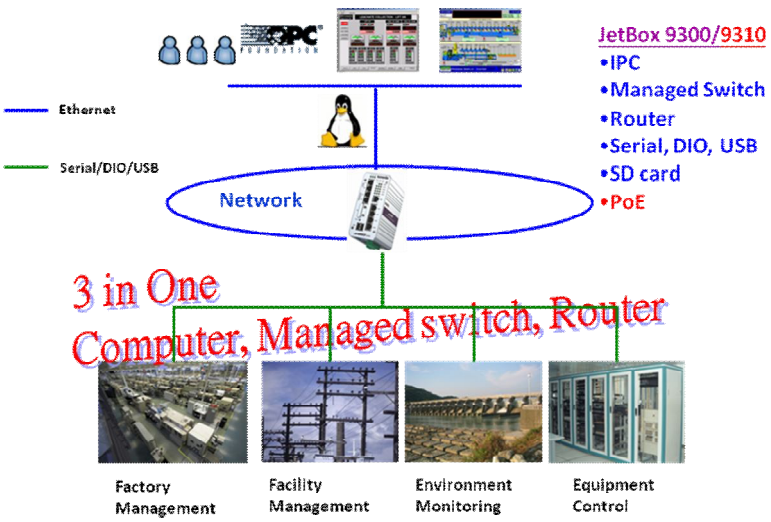
Chapter 1 Overview

In networking communication environments, routers, switches and computers are indispensable devices to a typical networking architecture. Along with technology development, the complexity of devices increases and the troublesome settings become more and more confusing. Hence, the revolution of networking devices is anticipated. Functional integration and human-oriented manipulation will be the mainstream in next networking generation.

JetBox 9300 is the communication transformer that digests router functionality, managed switch, and computer functions into one tiny box. Extreme simple operation is the core spirit of JetBox 9300. Korenix provides not only API, but also the User Interface to make managing the router, managed switch, and computer setting simple.

Entire system can be controlled through SNMP

SNMP (Simple Network Management Protocol) is used in networking management systems to monitor network-attached devices. JetBox 9310 provides complete SNMP v1, v2c, v3 protocol and MIBs (Management Information Bases). Customers can use one or more systems to manage a number of devices through JetBox 9300/9310 SNMP control.



JetBox9310

Power over Ethernet (JetBox 9310)

JetBox 9310 is an advanced version of the JetBox 9300 line with PoE function. Power over Ethernet is a useful technology for powering devices where it would be inconvenient, expensive or infeasible to supply power separately. JetBox 9310 refers to IEEE802.3af standard as a PSE (Power Sourcing Equipment) that provides 48 volts DC over two of the four available pairs on a Cat 3/Cat 5e/Cat 6 cables with a maximum current of 400 mA for a maximum load power of 15.4W.

Both JetBox 9300 and 9310 are RISC-based embedded computers, system memory 64MB SDRAM by default and also carries all major interfaces such as five Ethernet ports, two USB2.0 ports, two RS-232 ports, two RS-232/422/485 ports, four digital inputs, four digital outputs and one SD card slot. In addition, the built-in Linux OS and network essential applications allow the JetBox 9300/9310 to become powerful network engines.

Chapter 2 Software Specification

2-1 Utilities for the PC

2-1-1 JetBox Virtual COM Commander

This item provides support for Virtual COM driver installation in the PC and the VCOM management in the windows operating system. Refer to JetBox Virtual COM Commander user manual for details.

2-1-2 JetView

The JetView is a device management utility which supports various device management features. Currently, JetBox supports JetView 1.1 (or above version) for device discovery and basic system LAN IP address modification. With different versions, more features may be supported and you can always find the latest information on the Korenix web site or get help from Korenix Customer Support.

2-2 Software Package

Item	Description

Item	Description
Boot Loader	U-boot
Kernel	Linux 2.6.21
Protocol Stack	ARP, PPP, CHAP, PAP, IPv4, ICMP, TCP, UDP, DHCP, FTP, SNMPV1/V2c/V3, HTTP, NTP, NFS, SMTP, SSH 1.0/2.0, SSL, Telnet, PPPoE, Open VPN
File System	JFFS2, NFS, Ext2, Ext3, VFAT/FAT
OS Shell Command	Bash
Linux normal command utility collection	Busybox

Table 1: JetBox 9300/9310 Linux system

Utility	Description
iptable	The name of the user space tool by which administrators create rules for the packet filtering (both inbound and outbound) and NAT modules
telnet	telnet client program
ftp	FTP client program
smtpclient	Email utility
ethtool	Ethernet configuration program

Table 2: JetBox 9300/9310 Linux utility

Daemons	Description
pppd	Dial in/out over serial port daemon
snmpd	Snmpd agent daemon
telnetd	telnet server daemon
inetd	TCP server manager program
ftpd	ftp server daemon
goahead	Web server daemon
sshd	Secure shell server
openvpn	Virtual private network
openssl	Open SSL
syslogd	System log deamon

Table 3: JetBox 9300/9310 Linux daemons

Linux Tool Chain	Description
Gcc (arm-linux V3.4.6)	C/C++ PC Cross Compiler
uClibc (V0.9.29)	POSIX standard C library

Table 4: JetBox 9300/9310 Linux tool Chain

Windows Tool Chain	Description
Gcc (arm-linux V3.4.6)	C/C++ PC Cross Compiler
uClibc (V0.9.29)	POSIX standard C library

Table 5: JetBox 9300/9310 Linux tool chain for windows OS

2-3 Linux SDK (software development kits)

JetBox SDK has all the required software and utilities for you to develop your own applications. There are two folders in JetBox Linux SDK. One folder is for application source code and the other one is for Linux tool chain.

2-3-1 Installing SDK

JetBox SDK must be installed on your host computer running Linux. We have confirmed that **Fedore Core 6** Linux distribution can be used to install the tool chain. Using the command **tar** to uncompress the SDK archive jetbox_9300sdk-0.1.tgz at the directory where you want to complete the installation.

2-3-2 Application source code (ap_src)

This folder is for your application source code storage. One sample code inside is for your reference.

2-3-3 Linux tool chain (toolchain)

This folder contains a suite of cross compilers, other tools, and the libraries and header files that are necessary to compile your application. These tool chain components must be installed on your computer running Linux.

Chapter 3 Getting Started

3-1 Power on JetBox

Connect the DC power line to the DC terminal block at the bottom of the JetBox 9300/9310 and turn on the power switch. If the power is properly supplied, the power LEDs (P1, P2) on the front panel will show a solid green color.
The power supply of the JetBox 9300/ 9310 is 12 ~ 48V dual inputs and 48V only for JetBox 9310 PoE function. Only the correct power inputs will make the PoE chipset working normally, JetBox 9310 can modify the PoE function in web UI & CLI.

3-2 Connect JetBox to a PC

3-2-1 IP address

There are five Ethernet ports on the JetBox 9300/9310. The default settings are one WAN port and four LAN ports. The default IP addresses are as follows:

	Default IP Address	Subnet mask
WAN	Assigned by DHCP server	
LAN1~4	192.168.10.1	255.255.255.0

Table 6 IP addresses of JetBox Ethernet ports

You should first modify your PC's IP address and subnet mask so that your PC is on the same subnet as the JetBox WAN or LAN ports. For example, if you connect to the JetBox LAN ports, you can set your PC's IP address to 192.168.10.2 and subnet mask to 255.255.255.0.

3-2-2 Web User Interface

You can use **Web Browser** (for example, enter http://192.168.10.1) to connect to the JetBox 9300/9310 console utility. To login, type the Login name and password as required. The default values are both admin.
Login: admin
Password: admin

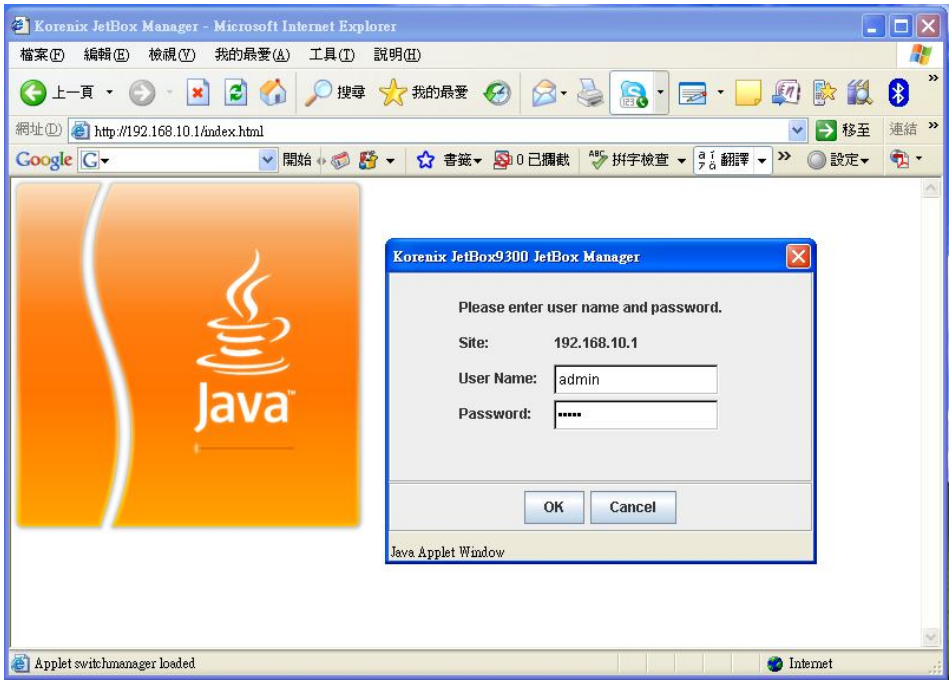
3-2-3 Telnet Console

You can use **Telnet** (for example, telnet 192.168.10.1 in cmd mode in your PC) to connect to the JetBox 9300/9310 console utility. To login, type the Login name and password as required. The default values are both admin.
Login: admin
Password: admin

⚠**Notice 1:** You can also use **Telnet** to connect to the JetBox 9300/9310 Linux environment. To login, you need another Login name and password. Kindly contact us for further inquiry. When you use the JetBox 9300/9310 Linux environment for some system modifications, the settings of the JetBox 9300/9310 Web UI and CLI might be changed and can't be used to control the JetBox 9300/9310 anymore.

Chapter 4 Software Feature—Web User Interface

JetBox Web management pages are developed by JAVA Script. Hence the JAVA virtual machine must be pre-installed in your PC. You can use a standard web browser such as Microsoft Internet Explorer or Mozilla Firefox to navigate the pages.

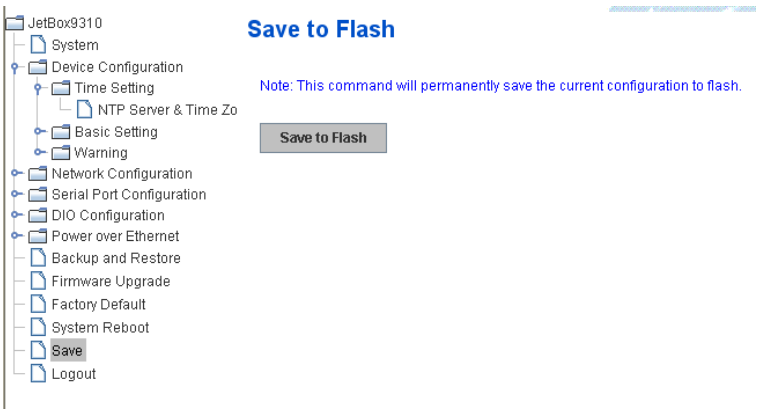


Snapshot 1: JetBox 9300/9310 Web UI login page

Snapshot 2: The SW menu tree and the welcome page of the JetBox 9300/9310 Web UI.

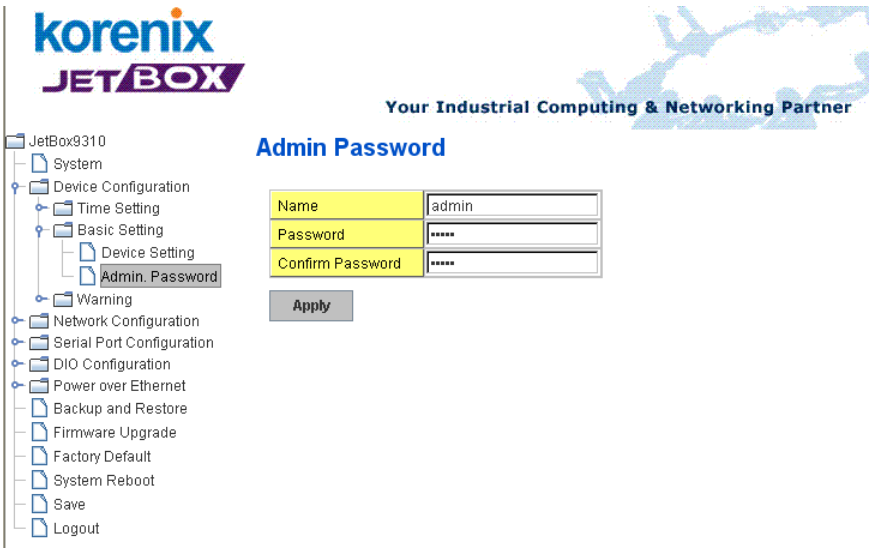
After you make any changes of Web UI, press the **Apply** button to enable the setting, please note that the setting will go back to default when the device is powered off.

If you want to save the changes you made, please go to **the SW menu tree|Save page**, and press the **Save to Flash** button to keep the changes of system.



Snapshot 3: Save page of the JetBox 9300/9310 Web UI

If you want to change the user name and password of the JetBox 9300/9310, go to **the SW menu tree| Admin. Password** to modify them.



Snapshot 4: Admin Password page of the JetBox 9300/9310 Web UI

⚠**Notice 2:** JetBox 9300/9310 Web UI or CLI will time out if there is no activity for a long period of time, you will need to reconnect to the JetBox 9300/9310 Web UI or CLI.

Snapshot 5: Error Message: JetBox 9300/9310 Web UI time out

4-1 System

Both JetBox 9300 and JetBox 9310 use the same SW. The SW will detect the difference of HW between JetBox 9300 and 9310, it will reflect the different SW menu tree on the Web UI. PoE function of the JetBox 9310 will be displayed in the SW menu tree only when the JetBox 9310 is correctly powered by a 48V power input, otherwise, the system will show JetBox 9300 instead with no PoE function.

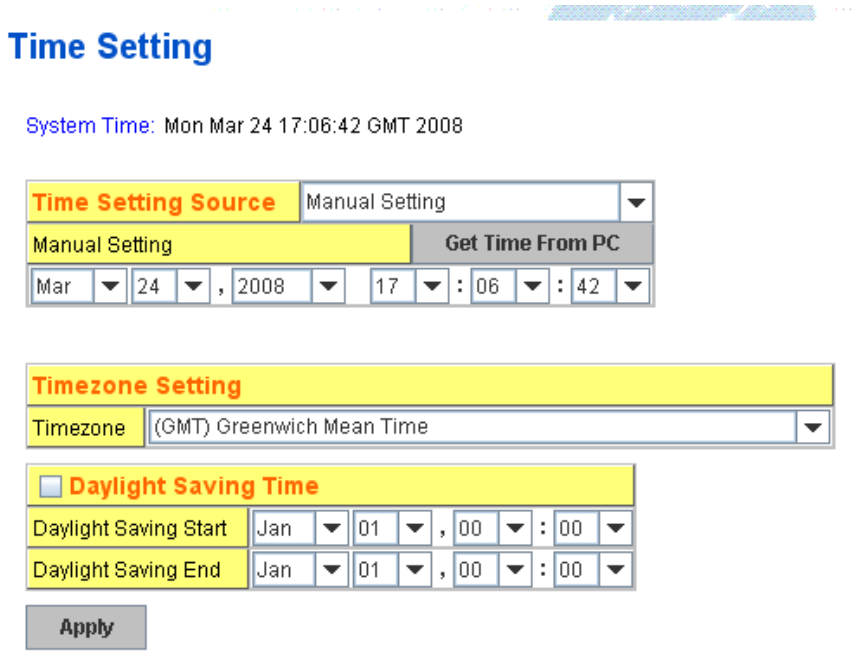
Snapshot 6: System page of JetBox 9300 Web UI

Snapshot 7: System page of JetBox 9310 Web UI

4-2 Device Configuration

4-2-1 Time Settings

4-2-1-1 NTP Server & Time Zone

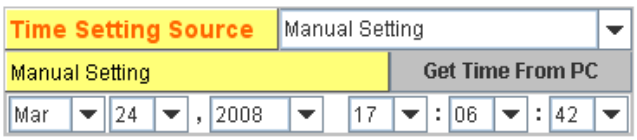


Snapshot 8: Time setting page of JetBox 9300/9310 Web UI

4-2-1-1-1 Time Setting Source

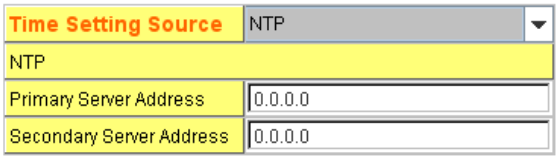
You can choose Manual Settings or Settings by NTP server.

Manual Settings: You can input the time directly, or use the **Get Time from PC** button to get the time from your PC connected to JetBox.



Snapshot 9: Time Setting Source: Manual Setting page of JetBox 9300/9310 Web UI

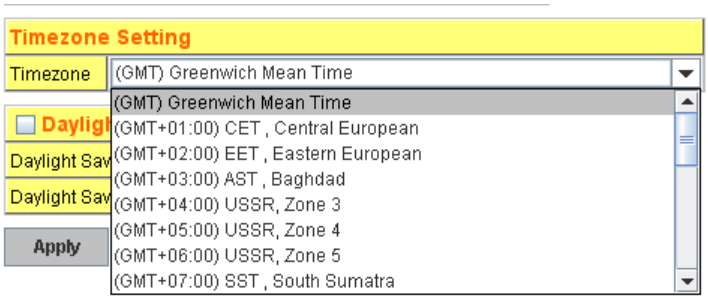
NTP servers: You can also input the IP addresses of your NTP server. JetBox provides two NTP server address items.



Snapshot 10: Time Settings Source: NTP page of JetBox 9300/9310 Web UI

4-2-1-1-2 Time Zone Settings

Choose your Time Zone from the listed items.



4-2-1-1-3 Daylight Saving Time

Check the Daylight Saving Time and input the start and end date of Daylight Saving Time if your Time Zone is in the Daylight Saving Time areas.

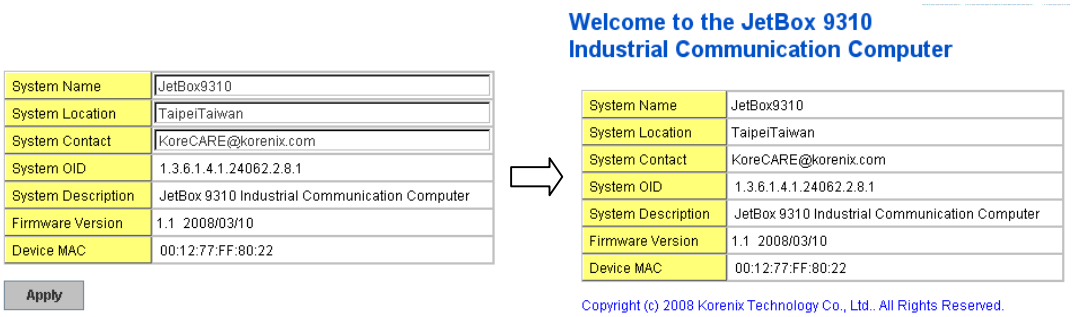
4-2-2 Basic Settings

4-2-2-1 Device Settings

You can input system name, system location, and system contact manually. The maximum input is 127 characters of English or numbers without a space, for example, 112TaipeiTaiwan. Special character inputs, such as \ / ? ! % #, are allowed.

After your modifications, press the **Apply** button. The welcome page of the JetBox 9300/9310 Web UI shows the new settings, system name, system location, and system contacts.

Go to **The SW menu tree|Save** and press the **Save to Flash** button to keep the change of system.



Snapshot 11: Device settings page of the JetBox 9300/9310 Web UI

4-2-2-2 Admin Password

You can change the user name and password of the JetBox 9300/9310 here. Fill in the same password in the fields of password and confirm password to double check. The maximum inputs for name, password, and confirm password is 20 continuing alphanumeric characters. Special character inputs, such as \ / ? ! % #, are allowed.

Snapshot 12: Admin Password page of the JetBox 9300/9310 Web UI

4-2-3 Warning

4-2-3-1 Event Selection

JetBox 9300/9310 provides a system warning function through email and SNMP trap. Please set up the email address and SNMP trap first, and then choose the system events you want to monitor here.

Refer to **4-2-3-3** SMTP Configuration for email address settings and **4-3-7-3** SNMP Traps for SNMP trap settings.

Snapshot 13: System event selection page of the JetBox 9300/9310 Web UI

Following are the warning events and timing to be sent out as warning message.

System event

Device Cold Start: Power source cut off and then reconnect to the device

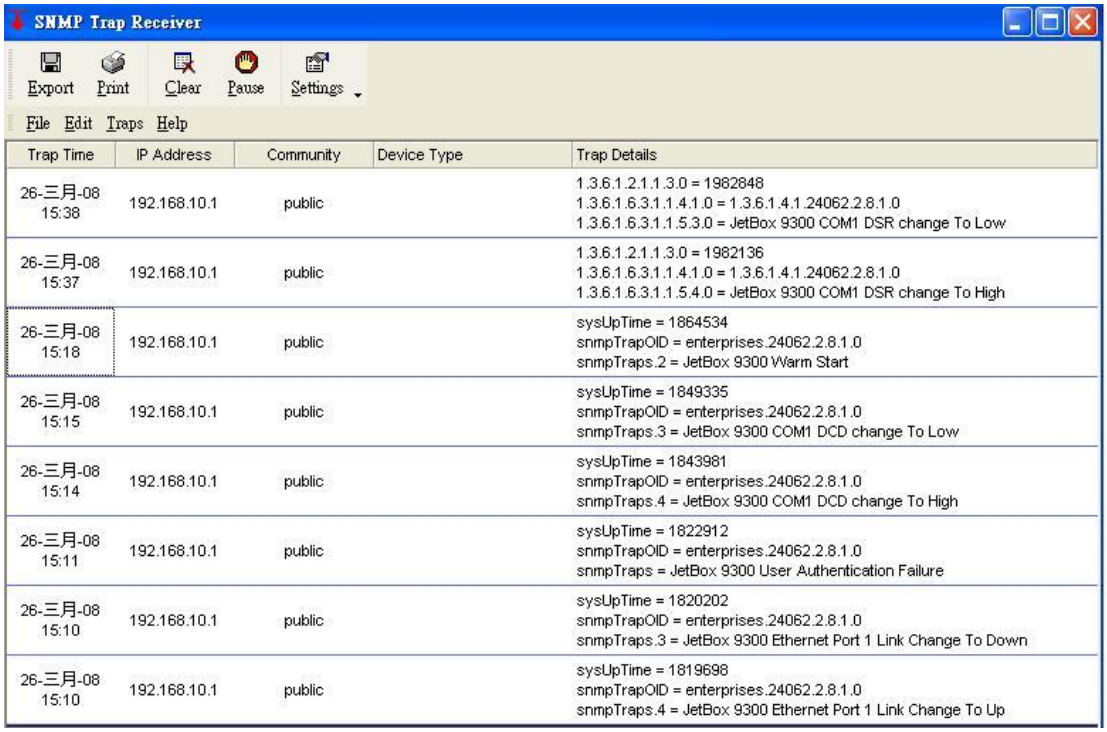
Device Warm Start: Reboot the device through Web UI or CLI.

Authentication Failure: An incorrect login password of JetBox 9300/9310 is entered.

Port events (Ethernet port or serial port)

Ethernet Link Status Change: The status of the Ethernet ports are changed, such as Link up or link down. Link-up is if the Ethernet port is connected to another device and link-down is if the Ethernet port is disconnected, e.g. the cable is pulled out or the opposing device turns down.

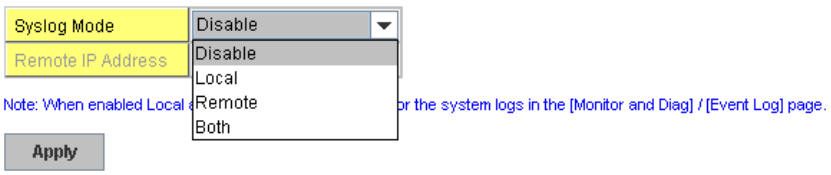
DCD/DSR Status Change: The event reports changes in the status lines of serial ports e.g. DCD (data carrier detect) or DSR (data set ready), when connection of communication line is ready or communication errors occur (the serial signal is high or low).


SNMP Trap Receiver
Export
Print
Clear
Pause
Settings
File Edit Traps Help
Trap Time | IP Address | Community | Device Type | Trap Details
26-三月-08 15:38 | 192.168.10.1 | public | 1.3.6.1.2.1.1.3.0 = 1982848
1.3.6.1.6.3.1.1.4.1.0 = 1.3.6.1.4.1.24062.2.8.1.0
1.3.6.1.6.3.1.1.5.3.0 = JetBox 9300 COM1 DSR change To Low
26-三月-08 15:37 | 192.168.10.1 | public | 1.3.6.1.2.1.1.3.0 = 1982136
1.3.6.1.6.3.1.1.4.1.0 = 1.3.6.1.4.1.24062.2.8.1.0
1.3.6.1.6.3.1.1.5.4.0 = JetBox 9300 COM1 DSR change To High
26-三月-08 15:18 | 192.168.10.1 | public | sysUpTime = 1864534
snmpTrapOID = enterprises.24062.2.8.1.0
snmpTraps.2 = JetBox 9300 Warm Start
26-三月-08 15:15 | 192.168.10.1 | public | sysUpTime = 1849335
snmpTrapOID = enterprises.24062.2.8.1.0
snmpTraps.3 = JetBox 9300 COM1 DCD change To Low
26-三月-08 15:14 | 192.168.10.1 | public | sysUpTime = 1843981
snmpTrapOID = enterprises.24062.2.8.1.0
snmpTraps.4 = JetBox 9300 COM1 DCD change To High
26-三月-08 15:11 | 192.168.10.1 | public | sysUpTime = 1822912
snmpTrapOID = enterprises.24062.2.8.1.0
snmpTraps = JetBox 9300 User Authentication Failure
26-三月-08 15:10 | 192.168.10.1 | public | sysUpTime = 1820202
snmpTrapOID = enterprises.24062.2.8.1.0
snmpTraps.3 = JetBox 9300 Ethernet Port 1 Link Change To Down
26-三月-08 15:10 | 192.168.10.1 | public | sysUpTime = 1819698
snmpTrapOID = enterprises.24062.2.8.1.0
snmpTraps.4 = JetBox 9300 Ethernet Port 1 Link Change To Up

Snapshot 14: SNMP Trap receiver for event warnings

4-2-3-2 Syslog Configurations

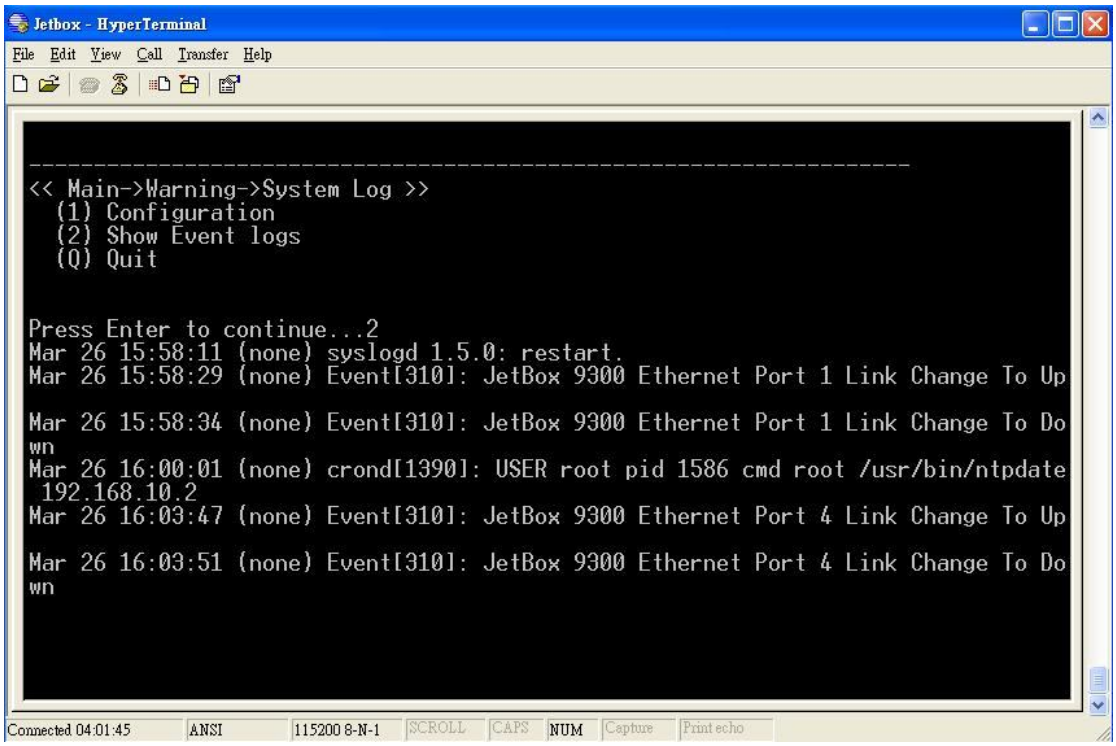
System log is useful to provide system administrators locally or remotely monitor JetBox 9300/9310 occurred events including the warning events that you selected in the event selection page, Linux system events, and other application events (e.g. serial server events). There are two system log modes provided by JetBox 9300/9310, local mode and remote mode.



Snapshot 15: Syslog configuration page of the JetBox 9300/9310 Web UI

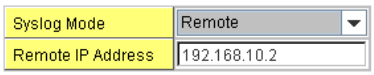
Disable: Do not enable syslog function in JetBox 9300/9310.

Local Mode: In this mode, JetBox 9300/9310 will print the occurred events to the System Log table of JetBox 9300/9310. You can monitor the system logs in **Main| Warning|System Log| Show Event Logs** page of the JetBox 9300/9310 CLI.


Jetbox - HyperTerminal
File Edit View Call Transfer Help
<< Main->Warning->System Log >>
(1) Configuration
(2) Show Event logs
(Q) Quit
Press Enter to continue...2
Mar 26 15:58:11 (none) syslogd 1.5.0: restart.
Mar 26 15:58:29 (none) Event[310]: JetBox 9300 Ethernet Port 1 Link Change To Up
Mar 26 15:58:34 (none) Event[310]: JetBox 9300 Ethernet Port 1 Link Change To Do
wn
Mar 26 16:00:01 (none) crond[1390]: USER root pid 1586 cmd root /usr/bin/ntpdate
192.168.10.2
Mar 26 16:03:47 (none) Event[310]: JetBox 9300 Ethernet Port 4 Link Change To Up
Mar 26 16:03:51 (none) Event[310]: JetBox 9300 Ethernet Port 4 Link Change To Do
wn
Connected 04:01:45
ANSI
115200 8-N-1
SCROLL
CAPS
NUM
Capture
Print echo

Snapshot 16: Show Event Logs page of the JetBox 9300/9310 CLI

Remote Mode: In this mode, you need to assign the IP address of the System Log server. JetBox 9300/9310 will send the occurred events to the System Log server that you assigned.



Snapshot 17: Syslog configuration—Remote mode page of JetBox 9300/9310 Web UI

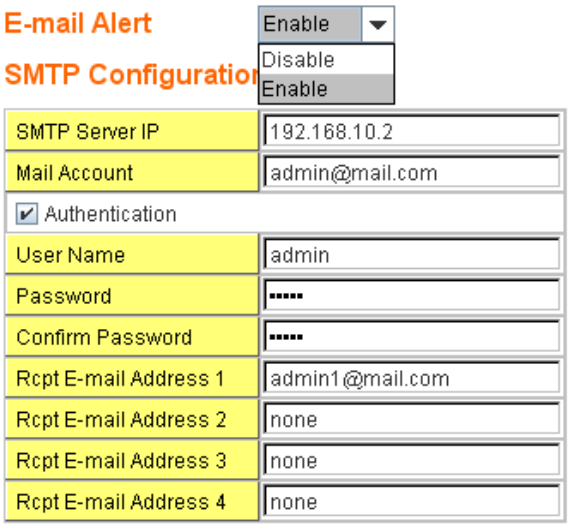
Both: Local Mode and Remote Mode can be enabled at the same time.

4-2-3-3 SMTP Configurations

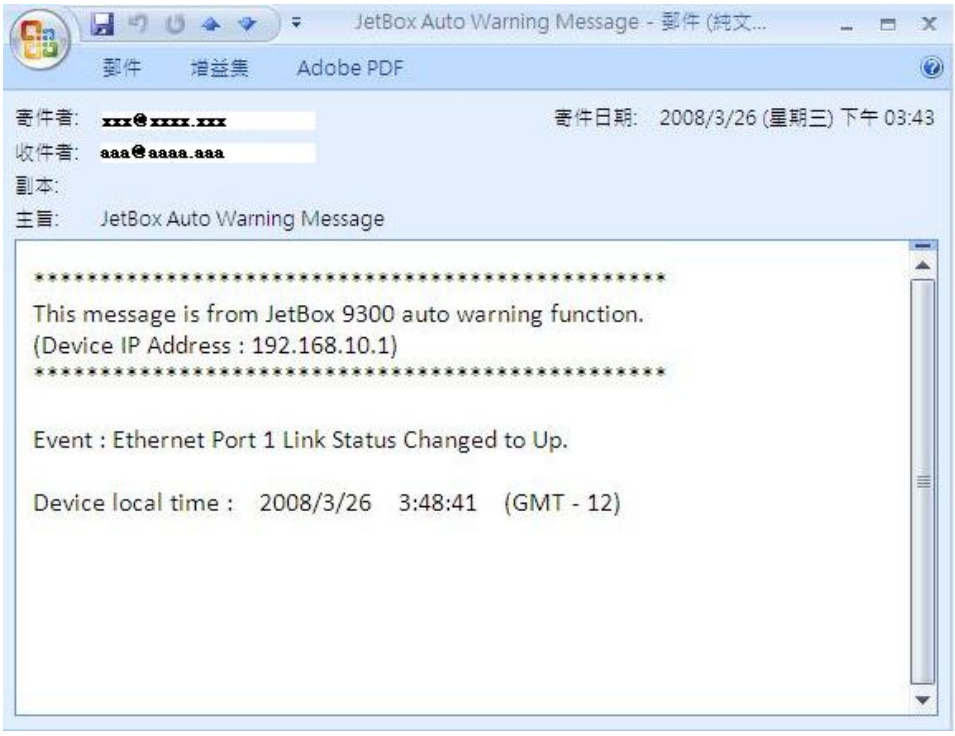
SMTP means Simple Mail Transfer Protocol. You can set up a SMTP server and a mail account here to deliver the warning e-mails of the JetBox 9300/9310 based on the events you select in **the SW menu tree| Basic Setting| Warning| Event Selection**. JetBox 9300/9310 provides up to four recipient e-mail addresses.

JetBox 9300/9310 also provides the authentication mode for SMTP server setting. In authentication mode, the user name and password of SMTP server is required. Fill in the same password in password and confirm password to double check. The

maximum inputs for user name, password, and confirm password is 60 continuing alphanumeric characters. Special character inputs, such as \ / ? ! % #, are allowed.



Snapshot 18: SMTP configurations page of JetBox 9300/9310 Web UI


JetBox Auto Warning Message - 郵件 (純文...
郵件
增益集
Adobe PDF
寄件者:
收件者:
副本:
主旨: JetBox Auto Warning Message
寄件日期: 2008/3/26 (星期三) 下午 03:43
This message is from JetBox 9300 auto warning function.
(Device IP Address : 192.168.10.1)
Event : Ethernet Port 1 Link Status Changed to Up.
Device local time : 2008/3/26 3:48:41 (GMT - 12)

Snapshot 19 E-mail warning message of the JetBox 9300/9310

4-3 Network Configuration

There are five Ethernet ports of JetBox 9300/9310. The default setting of Ethernet ports in the JetBox 9300/9310 is one WAN port and four LAN ports. Advanced Linux

users can change the settings through JetBox 9300/9310 Linux environment to provide the flexibility of adapting JetBox 9300/9310 to various networking environments, such as using two WAN ports for two enterprises' networks as networking redundancy.

4-3-1 WAN Settings

WAN (Wide Area Network) Settings are settings that are used to connect to your ISP (Internet Service Provider). The WAN settings are provided to you by your ISP. Please select the appropriate option for your specific ISP and enter the DNS server addresses if necessary.

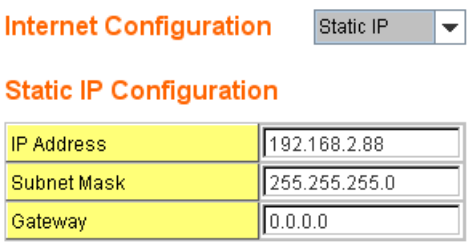
WAN-Dynamic IP Address

Select this option if your ISP provides you with IP address automatically. Cable modem providers typically use dynamic assignment of IP Addresses. In this mode, the DNS server is often dynamically assigned by your ISP.

Snapshot 20: Internet Configuration—Dynamic IP page of the JetBox 9300/9310 Web UI

WAN-Static IP Addresses

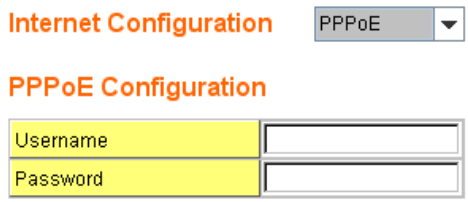
If required by your ISP, select this option to configure the device with static IP Address information. Enter the IP Address, Subnet Mask, Gateway address, and DNS (Domain Name Server) addresses provided to you by your ISP. Each IP address entered in the fields must be in the appropriate IP form, which are four IP octets separated by a dot (x.x.x.x.). The device will not accept the IP address if it is not in this format.



Snapshot 21: Internet Configuration—Static IP page of the JetBox 9300/9310 Web UI

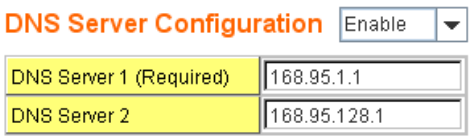
WAN-PPPoE

Select this option if your ISP requires you to use a PPPoE (Point to Point protocol over Ethernet) connection. DSL providers typically use this option. Enter your **PPPoE user name** and **password** in PPPoE Configuration. If the connection can't be made within 30 seconds (default setting in system), then it will cause a connection timeout.



Snapshot 22: Internet Configuration—PPPoE page of the JetBox 9300/9310 Web UI

DNS (Domain Name System): This is the name resolution protocol for TCP/IP networks, such as the Internet. Client computers query a DNS server to resolve memorable, alphanumeric DNS names to the IP addresses that computers use to communicate with each other. If your ISP will assign the DNS server dynamically, choose disable or choose enable and enter the static DNS addresses provided to you by your ISP.



Snapshot 23: WAN settings—DNS server configuration of JetBox 9300/9310 Web UI

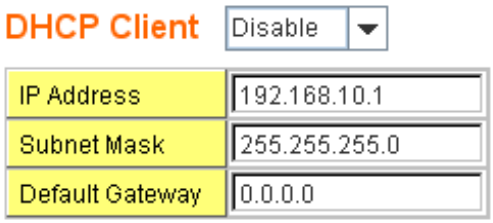
4-3-2 LAN Settings

This page allows users to configure the device IP address settings. The default IP addresses of four LAN ports of the JetBox 9300/9310 is 192.168.10.1, the subnet mask is 255.255.255.0. For Advanced Linux users, four LAN ports can be configured as four separate subnets in the JetBox 9300/9310 Linux environment. Please go to **3-2-3 Telnet Console** for view how to go to JetBox 9300/9310 Linux environment.

JetBox 9300/9310 provides either DHCP Client or DHCP Server for LAN ports.

DHCP Client: You can select to Enable or Disable the DHCP Client function. When DHCP Client function is enabled, an IP address will be assigned to JetBox 9300/9310 from the network's DHCP server. In this mode, the default IP address will therefore be replaced by the one assigned by the DHCP server. If DHCP Client is disabled, then

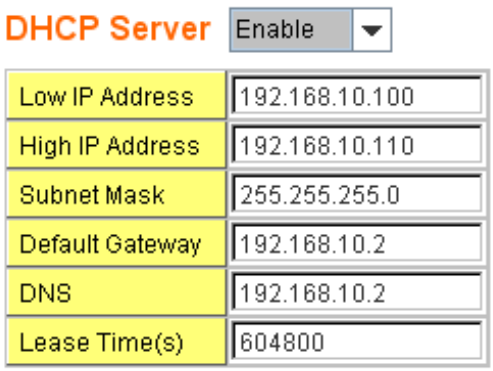
the IP address that you specified will be used instead.



Snapshot 24 LAN settings| DHCP client page of JetBox 9300/9310 Web UI

DHCP Server: You can select to Enable or Disable DHCP Server function. When DHCP server function is enabled, the JetBox 9300/9310 will assign the IP addresses between the low and high IP addresses, and configuration parameters such as the default subnet mask, the default gateway, the default DNS server, and the lease time to the DHCP client devices connected to the JetBox 9300/9310.

⚠**Notice 3:** When JetBox 9300/9310 works as a DHCP server to assign the IP addresses to the DHCP client devices connected to JetBox 9300/9310, it will cause IP address conflicts if there are any other devices connected to the JetBox 9300/9310 using static IP addresses that are within the same range. In this case, the same IP address might be used twice.

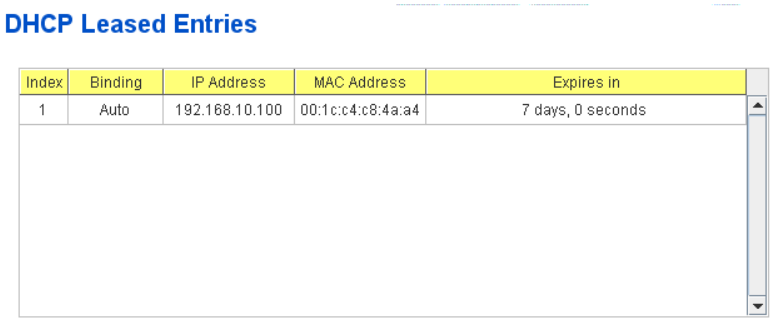


Snapshot 25: LAN settings| DHCP server page of the JetBox 9300/9310 Web UI

Lease Time (s): A DHCP-enabled client obtains a lease for an IP address from a DHCP server. Before the lease expires, the DHCP server must renew the lease for the client or the client must obtain a new lease. The maximum lease time is 2147483647 seconds.

4-3-3 Leased Entries

When DHCP server is enabled, you can check the leased IP addresses here.



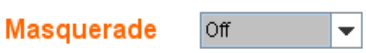
Snapshot 26: LAN settings| DHCP leased entries of the JetBox 9300/9310 Web UI

4-3-4 NAT Settings

Masquerade: This item is to enable (on) or disable (off) the NAT function.
JetBox 9300/9310 provides the **NAT (Network Address Translation)** function to map the local inside network addresses to one or more global outside IP addresses and unmap the global IP addresses on incoming packets back into local IP addresses. This function is often part of firewall to ensure the security since each outgoing or incoming request must go through a translation process.
If Masquerade is on, JetBox 9300/9310 maps the local inside network addresses of one subnet to one global outside IP addresses and unmaps the global IP addresses on incoming packets back into local IP addresses.

For advanced Linux users, JetBox 9300/9310 also provides the mapping of the local inside network addresses of several subnets to one or more global outside IP addresses in Linux environment. Please refer to the document “Advanced NAT settings for JetBox 9300.”

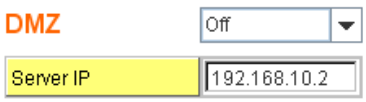
⚠**Notice 4:** The maximum bandwidth of the routing is limited at 2M.



Snapshot 27: NAT setting| Masquerade page of JetBox 9300/9310 Web UI

DMZ: This item is to enable (on) or disable (off) the DMZ (demilitarized zone) when the masquerade item is on. Enter **the IP address of the server** to expose to the outside world.

JetBox 9300/9310 provides NAT endpoint filtering as a firewall to protect the customer's network from the outside world. Any incoming traffic must match the IP address of the outgoing connection when NAT endpoint filtering is enabled. Sometimes, customers need to expose certain types of applications to the outside world; therefore the JetBox 9300/9310 also provides DMZ host function. Customers can place a computer in the DMZ to expose to the Internet and run the application on that computer when DMZ host is enabled.



Snapshot 28: NAT setting| DMZ page of JetBox 9300/9310 Web UI

VPN Pass Through: This item is to enable (on) or disable (off) the VPN Pass Through function when the masquerade item is on. You can specify which VPN protocol is on or off.

VPN (Virtual Private Network) is to create encrypted "tunnels" though the Internet and works as a cost-effective alternative to using a private, dedicated, leased line for a private network. VPN is using industry standard encryption and authentication technology, such as L2TP, PPTP, or IPsec VPN protocol.

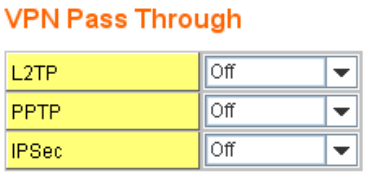
VPN Pass Through is needed because the JetBox 9300/9310 is Network Address Translation (NAT)-enabled and VPN protocols, such as L2TP, PPTP, or IPsec, don't have a specific port number for the device to multiplex the port address translation back to. This feature enables special processing of VPN protocol data packets and allows the device to keep a table of active connected VPN tunnels.

VPN Protocol

PPTP (Point to Point Tunneling Protocol) extends the Point to Point Protocol (PPP) standard for traditional dial-up networking. PPTP is a layer 2-based encryption technology and is suited for the remote access applications of VPNs

L2TP (Layer Two Tunneling Protocol) L2TP is an extension of the PPTP commonly used today.

IPSec (Short for IP Security) is a layer 3-based encryption technology and is faster and more efficient than PPTP.



Snapshot 29: NAT setting| VPN Pass Through page of the JetBox 9300/9310 Web UI

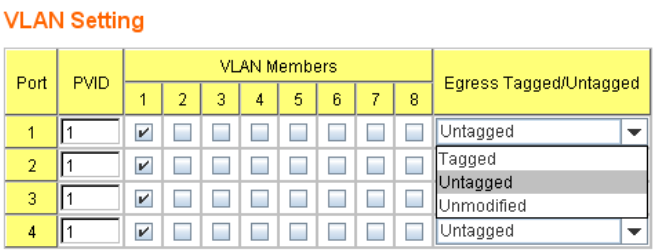
4-3-5 VLAN

VLAN (Virtual Local Area Network) is for segmenting ports on an Ethernet switch into logical groupings. Each logical grouping works as if it were a separate physical LAN. JetBox 9300/9310 supports both 802.1Q tag VLAN and port based VLAN.

802.1Q tag VLAN

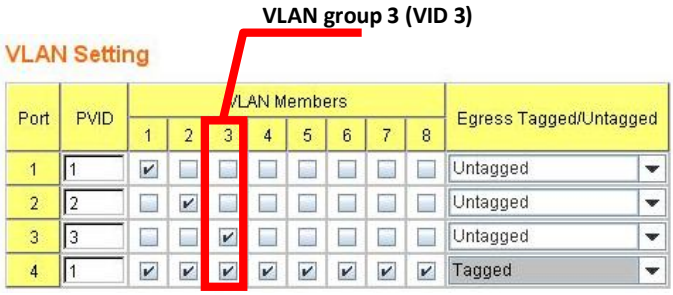
The IEEE 802.1Q specification establishes a standard method for inserting VLAN membership information into Ethernet frames.

Any traffic without a VLAN tag entering the LAN ports of the JetBox 9300/9310 will be inserted with a VLAN tag of the assigned PVID (Port VLAN ID) and then be forwarded to the corresponding VLAN members. Any traffic with a VLAN tag can enter any of the LAN ports of JetBox 9300/9310 and be forwarded to the corresponding VLAN members directly. You can choose tagged, untagged, or unmodified for the egress packet. In the JetBox 9300/9310, **1~8 VLANs** can be established in the web UI or CLI. For advanced Linux users, 1~4096 VLANs can be established in the JetBox 9300/9310 Linux environment. The default setting is VLAN disable.



Snapshot 30: VLAN setting (VLAN disable) of JetBox 9300/9310 Web UI

The following snapshot is a sample setting. A packet with VID 3 enters LAN port 4 (as a VLAN trunk port) of the JetBox 9300/9310, it will keep the VID3 and be forwarded to VLAN group 3 (LAN port3). For the egress packet of LAN port3, the VID 3 tag is taken off when the packet exits the port.



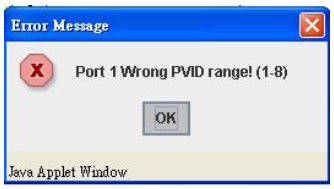
Snapshot 31: VLAN setting (802.1Q tag VLAN) of the JetBox 9300/9310 Web UI

Port

Unique identifier for the LAN ports of the JetBox 9300/9310

PVID (Port VLAN ID): Default 1, input from 1 to 8

This is the native VLAN assigned to this port. When the port receives an untagged packet, an IEEE802.3ac VLAN tag is added to the packet using the port's PVID. When a port receives a tagged packet on an access port, the tag is kept with the packet. The Default value is 1 and it could be set from 1 to 8. If the input value is not correct, the system will pop out a warning message.



Snapshot 32: Error message: VLAN| Wrong PVID range (1~8)

VLAN members: VID from 1 to 8

Each port that's connected to the VLAN must be assigned a VID. The LAN ports of the JetBox 9300/9310 can be configured to include or exclude specific VLANs by this matrix. This item defines the port that traffic could be forward to.

Egress Tagged/ Untagged

This item is a tag modification function. All egress packets will be modified by the selected rule, such as tagged, untagged, or unmodified.

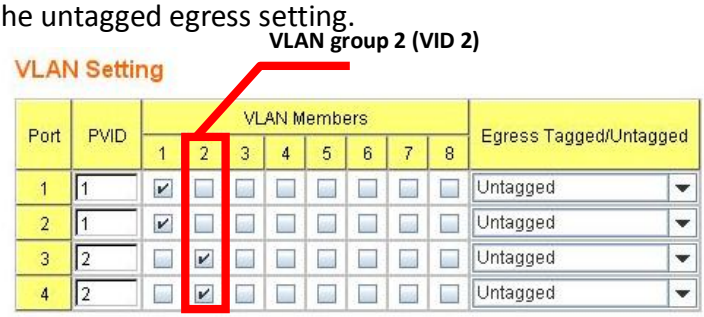
- Tagged—the original tag is kept or the assigned PVID tag is added into the egress packet.
- Untagged—the original tag or the assigned PVID tag is removed from the egress packet.
- Unmodified—the egress packet keeps the original tagged or untagged status without further modification.

⚠**Notice 5:** A untagged packet that enters one of the JetBox 9300/9310 Ethernet ports is inserted the PVID tag of that port and then the packet is forwarded to the corresponding VLAN members, exits the port and still keeps the PVID tag if you choose to un-modify for egress setting. If you want the egress packet without any tags, you must choose untagged for egress setting.

Port based VLAN

Each LAN port of the JetBox 9300/9310 can be defined as an access port that is statically assigned to the VLAN members of its PVID and the PVID of each LAN port of the JetBox 9300/9310 is a user-configurable parameter from 1 to 8. For port based VLAN, you need to choose untagged for the egress packet to remove the PVID tag that the JetBox 9300/9310 added into the packet.

The following snapshot is a sample setting. An untagged packet enters the LAN port 4 and it's given the VLAN tag of the PVID 2 and is forwarded to the VLAN members of VID 2. The packet exits by LAN port 3 and the VLAN tag of the packet is removed by the untagged egress setting.



Snapshot 33: VLAN setting (port based VLAN) of JetBox 9300/9310 Web UI

4-3-6 Traffic Prioritization

In the past, the concept of quality in networks meant that all network traffic was treated equally. The QoS (Quality of Service) concept means that some traffic needs preferential treatment because the requirements of some applications and users are more critical than others. In addition, QoS for networks is an industry-wide set of standards and mechanisms for ensuring high-quality performance for critical applications.

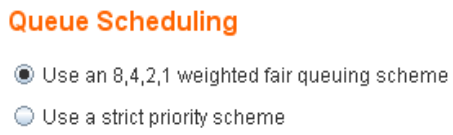
When QoS is enabled, packets are queued based on the port trust mode, which is derived from the incoming port configurations, CoS queue mapping, or DSCP queue mapping.

4-3-6-1 QoS Settings

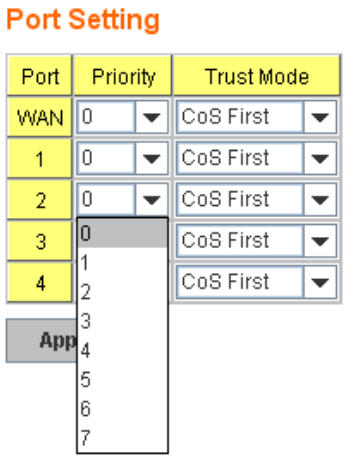
Through this section, you can set up the priority level for port based CoS value, incoming CoS (CoS-Queue Mapping), or incoming DSCP (DSCP-Queue Mapping) and define the way to process all ingress packets by either the strict priority scheme or the weighted fair queue according to the priority levels of port based, CoS only, DSCP only, CoS first, or DSCP first. JetBox 9300/9310 supports 4 physical queues from 0 to 3.

Physical queue	Priority
0	Low
1	Normal
2	Medium
3	High

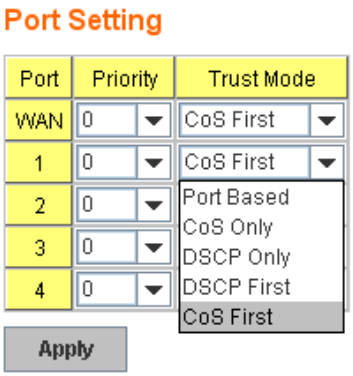
Table 7: QoS setting| Physical queue of JetBox 9300/9310 Web UI



Snapshot 34: Traffic prioritization| QoS setting page of the JetBox 9300/9310 Web UI



Snapshot 35: QoS setting| Port setting| Priority page of the JetBox 9300/9310 Web UI



Snapshot 36: QoS setting| Port setting| Trust mode page of the JetBox 9300/9310 Web UI

Queue scheduling

Use an 8,4,2,1 weighted fair queuing scheme: This is also known as WRR (Weight Round Robin). JetBox 9300/9310 follows the rate of 8:4:2:1 to process the packets with the high, the medium, the low, and the normal priority in a queue. For example, the system processes 8 packets with the high priority in the queue, 4 with medium priority, and 2 with low priority and 1 with the normal priority at the same time.

Use a strict priority scheme: Packets with higher priority in the queue will always be processed first, unless there is no packet with higher priority in a queue.

The default is using an 8,4,2,1 weighted fair queuing scheme.

Port setting

Priority: You can choose the QoS priority levels for each Ethernet port of JetBox 9300/9310 from 0 to 7.

Trust Mode

Trust Mode	Description
Port Based	Use the priority level of the port configuration
CoS Only	Use the priority level of CoS Queue Mapping only
DSCP Only	Use the priority level of DSCP Queue Mapping only
DSCP First	Use the priority level of both CoS and DSCP Queue Mapping, but DSCP Queue Mapping first
CoS First	Use the priority level of both CoS and DSCP Queue Mapping, but CoS Queue Mapping first

Table 8: QoS Setting| Trust mode page of JetBox 9300/9310 Web UI

Port Based: JetBox 9300/9310 will give all ingress packets the priority tag based on the priority level (CoS Value) of the ingress port. The CoS value maps to physical queue in the page of CoS Queue Mapping.

CoS (Class of Service): Layer 2 prioritization of packets is based on a CoS value.

CoS Value	Traffic type
0	Best effort
1	Background
2	Standard
3	Excellent load
4	Controlled load
5	Voice and Video
6	Layer 3 network control reserved traffic
7	Layer 2 network control reserved traffic

Table 9 QoS priority level follows 802.1p

DSCP (Differentiated Services Code Point): Layer 3 prioritization of packets is based on a DSCP value. A network could have from 0 to 64 different traffic classes using different markings in the DSCP.

4-3-6-2 CoS-Queue Mapping

The default setting follows IEEE802.1p standard to map the CoS values to the physical queues. You can modify the physical queue of each item here.

CoS Value	Physical Queue	
0	Normal	1
1	Low	0
2	Low	0
3	Normal	1
4	Medium	2
5	Medium	2
6	High	3
7	High	3

Table 10: The CoS values map to the physical queues

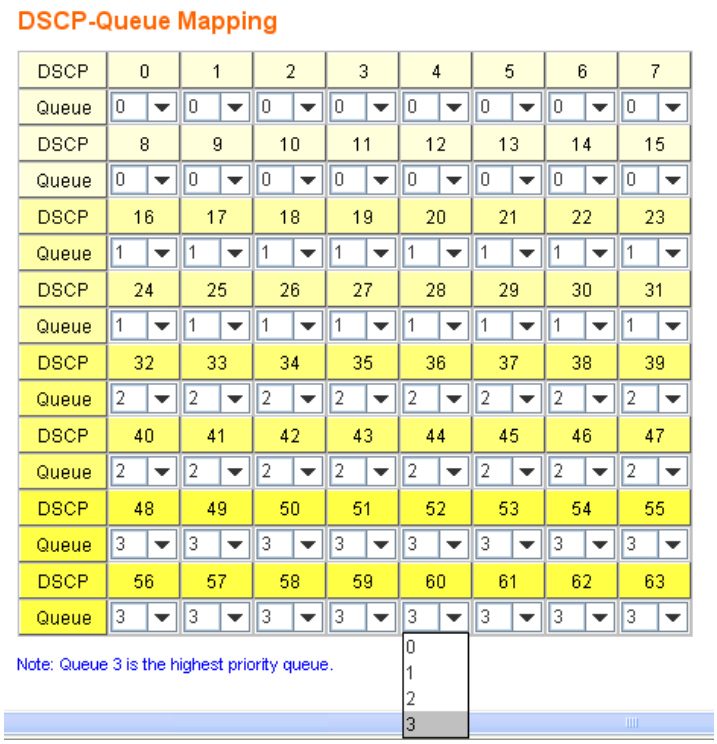
Snapshot 37: Traffic Prioritization| CoS-Queue Mapping page of the JetBox 9300/9310 Web UI

4-3-6-3 DSCP-Queue Mapping

The default setting follows IEEE802.1p standard to map the DSCP values to the physical queues. You can modify the physical queue of each item here.

DSCP Value	Physical Queue	
0~15	Low	0
16~31	Normal	1
32~47	Medium	2
48~63	High	3

Table 11: The DSCP values map to the physical queues



Snapshot 38: Traffic prioritization| DSCP-Queue Mapping page of the JetBox 9300/9310 Web UI

4-3-7 SNMP

SNMP (Simple Network Management Protocol) is used in networking management systems to monitor network-attached devices. JetBox 9300/9310 provides complete SNMP v1, v2c, v3 protocol and MIBs (Management Information Bases). Customers can use one or more systems to manage a number of devices through the JetBox 9300/9310 SNMP control.

SNMP basic components

SNMP component	Description
Managed device	A network node contains an SNMP agent and resides on a managed network. It collects and stores management information for NMSs using SNMP.
Agent (SNMP server)	It is a network management software module that resides in a managed device. It translates the management information of the local managed device into a form compatible with SNMP.
Network management system (NMS) (SNMP client)	It executes applications to monitor and control managed devices.

Table 12: SNMP basic component

MIB (Management Information Base)

MIBs is a collection of information with organized hierarchy and be accessed by using a network management protocol like SNMP. A MIB hierarchy can be illustrated as a MIB tree. SNMP uses a subset of **Abstract Syntax Notation One (ASN. 1)** to adapt to communication to various systems of managed devices. The **SMI (Structure of Management Information)** use ASN.1 to define the rules for describing management information.

A managed object is one of specific characteristics of a managed device. Two types of managed objects are scalar object (a single object instance) and tabular object (multiple related object instances grouped in a MIB table). **An object identifier (OID)** identifies a managed object in the MIB tree uniquely. The top-level MIB OIDs are defined by different standards organizations and lower-level OIDs are allocated by companies.

RMON (Remote Monitoring) is a standard monitoring specification that enables various network monitors and console systems to exchange network-monitoring data. There are 2 versions of RMON: RMON1 (RMONv1)and RMON2 (RMONv2). **RMON1** defined 10 MIB groups for basic network monitoring, which can now be found on most modern network hardware. **RMON2** is an extension of RMON1 that focuses on higher layers of traffic above the MAC (medium access-control) layer.

SNMP version

SNMP V1 is the initial implementation of the SNMP protocol and focuses on functions within the specification of SMI. The SNMP v1 SMI defines highly structured **MIB tables** used to group the instances of a tabular object.

SNMP V2c (Community-Based SNMP) is an evolution of SNMP v1 for the specification of the SMI and additional protocol operations.

SNMP V3 adds security and remote configuration enhancements to SNMP such as message integrity, authentication, and encryption.

MIBs for JetBox 9300/9310 SNMP agent

Standard MIB

第 1 章 RFC1213-MIB
第 2 章 SNMPv2-MIB
第 3 章 IF-MIB
第 4 章 IP-MIB
第 5 章 Ethernet-MIB
第 6 章 EtherLike-MIB
第 7 章 RFC1271-MIB
第 8 章 RMON2-MIB
第 9 章 BRIDGE-MIB
第 10 章 Q-BRIDGE-MIB
第 11 章 HOST-RESOURCE-MIB

Private MIB

Basic setting
Ethernet configuration
PoE
Serial
DIO setting
SNMP

Security
Warning
Backup and restore
System update
System reboot
Factory default
Save

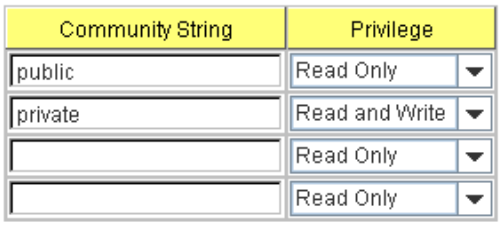
⚠**Notice 6:** Before viewing the private MIB of JetBox 9300/9310, you need to compile the private MIB files into your MIB browser.

4-3-7-1 SNMP V1/V2c Configuration

For SNMPV1 and V2c, the authentication of clients is performed only by a **community string**, in effect a type of password.

You can define the community string and its corresponding privilege here. The default setting is public for read only and private for read and write. JetBox 9300/9310 provides up to 4 community strings. The maximum input for community strings is 32 continuing alphanumeric characters. Special character inputs, such as \ / ? ! % #, are allowed.

⚠**Notice 7:** Most SNMP management applications use public and private as default community strings, so highly recommend you to change the community string for better network security of SNMP v1 and v2c.



Snapshot 39 SNMP| SNMP V1/V2c configuration page of JetBox 9300/9310 Web UI

4-3-7-2 SNMP V3 Profile

JetBox 9300/9310 supports user based security mode of SNMP V3 including authentication, privacy, and access lists. You can configure the privacy (DES encryption password), authentication (MD5 or SHA) and access control list (user

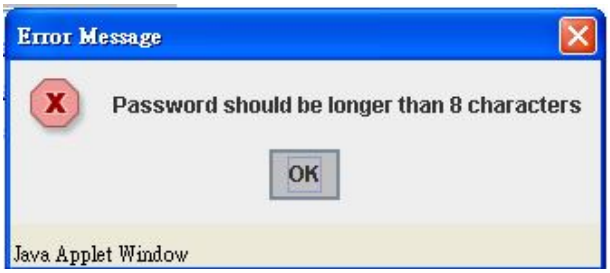
name, security level, authentication level, and authentication password) here.

The maximum input for user name is 32 continuing alphanumeric characters. Special character inputs, such as \ / ? ! % #, are allowed.

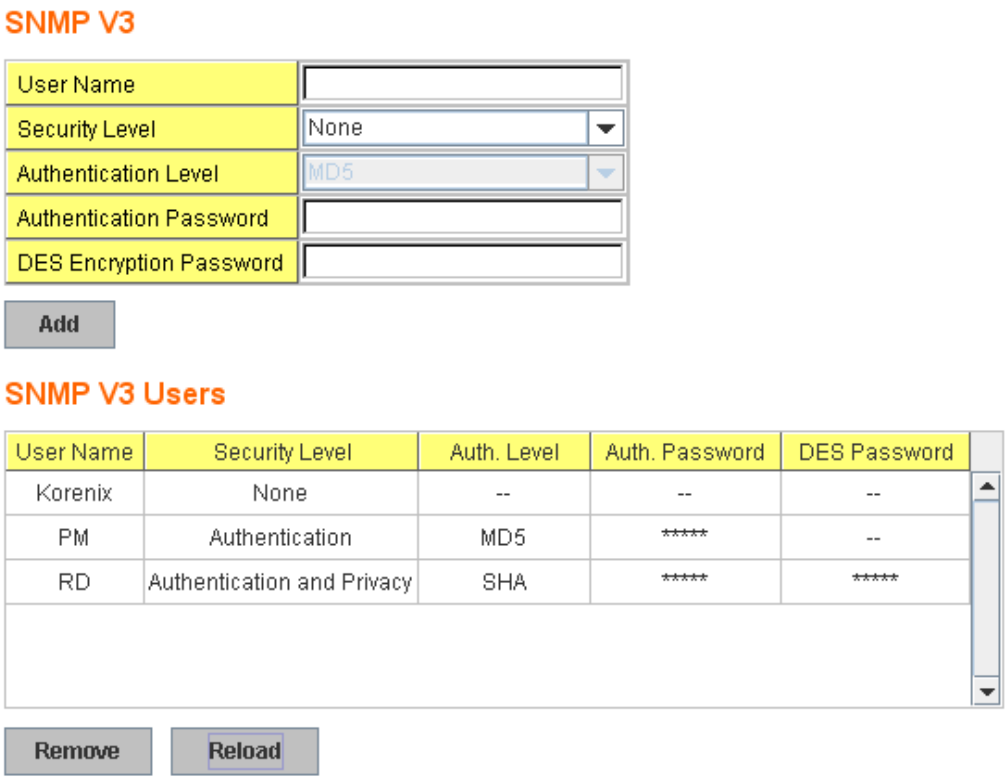
The input for authentication password is 8~20 continuing alphanumeric characters. Special character inputs, such as \ / ? ! % #, are allowed.

The input for DES encryption password is 8~16 continuing alphanumeric characters. Special character inputs, such as \ / ? ! % #, are allowed.

If the authentication or DES encryption password value is less than 8 characters, the system will pop out a warning message.



Snapshot 40: Error message: Password should be longer than 8 characters



Snapshot 41: SNMP| SNMP V3 profile page of JetBox 9300/9310 Web UI

Security Level

Security level	Description
None	No password or encryption for access
Authentication	An authentication password is required for access
Authentication and privacy	An authentication password and an DES encryption password is required for access

Table 13: SNMP V3| Security level of the JetBox 9300/9310

MD5 (Message Digest algorithm 5) is a widely used cryptography with a 128-bit resulting has value.

SHA (Secure Hash Algorithm) is for computing a condensed representation (known as the message digest) of electronic data (the message).

DES (Data Encryption Standard) is a standard encryption mechanism to authenticate both users and systems in the network by the DES and public key cryptography.

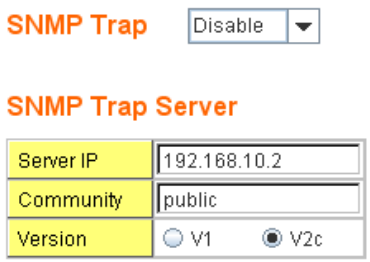
4-3-7-3 SNMP Traps

A SNMP Trap is used to report an alert or other asynchronous event about a managed subsystem.

In SNMP V1, asynchronous event reports are called traps and traps are defied using the TRAP-TYPE macro.

In SNMP V2c, asynchronous event reports are called notifications and traps are defined using the NOTIFICATION-TYPE macro.

SNMP trap is disabled as default. You can enable SNMP trap here and enter SNMP server IP address, enter community and choose SNMP version (V1 or V2c).



Snapshot 42 SNMP| SNMP traps page of JetBox 9300/9310 Web UI

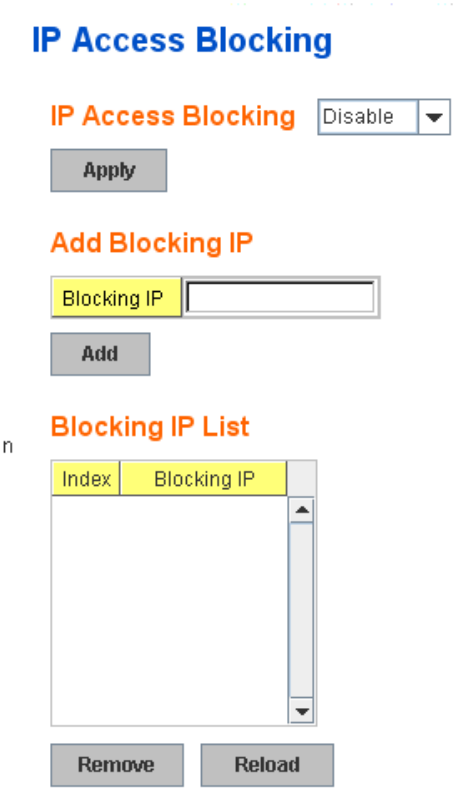
4-3-8 Security

JetBox 9300/9310 provides an access denied list based on IP addresses for specific connection policy.

4-3-8-1 IP Access Blocking

IP access blocking is disabled by default. You can enable it here. Enter the blocking IP address you want to add into blocking IP list and press [add]. Up to 50 IP addresses can be added into the blocking IP list. If you want to remove any IP addresses of the blocking IP list, choose the one you want to remove, press [remove].

Press [reload] to check the latest status of blocking IP list.



Snapshot 43: Security| IP access blocking page of the JetBox 9300/9310 Web UI

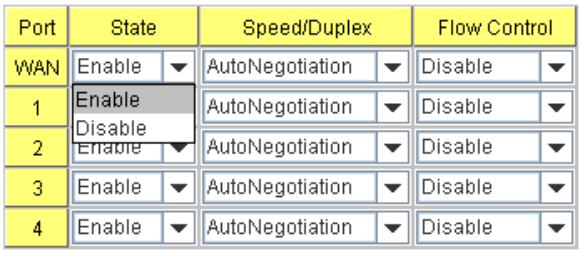
4-3-9 Switch Port Configuration

JetBox 9300/9310 provides five 10/100 based Tx Ethernet ports. You can configure related port setting through this page.

4-3-9-1 Port Control

You can configure the state, the speed/duplex, and the flow control of each Ethernet port of JetBox 9300/9310 through this page and check the updated status in the port status page.

State: The state of each Ethernet port is enabled as default. If you disable the port, the port stops linking to the other end and stops forwarding any traffic.

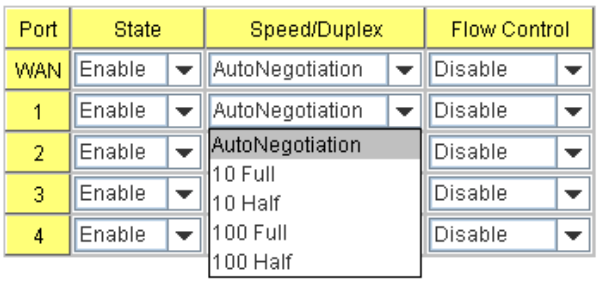


Snapshot 44 Switch port configuration| Port control| State page of JetBox 9300/9310 Web UI

Speed/Duplex: You can configure the port speed and the duplex mode of each Ethernet port of the JetBox 9300/9310. Auto-Negotiation is set by default. You can modified this in the listed items.

Speed/Duplex	Speed	Duplex
Auto Negotiation	Auto Negotiation	Auto Negotiation
10 Full	10M	Full
10 Half	10M	Half
100 Full	100M	Full
100 Half	100M	Half

Table 14: Port control| Speed/Duplex of JetBox 9300/9310

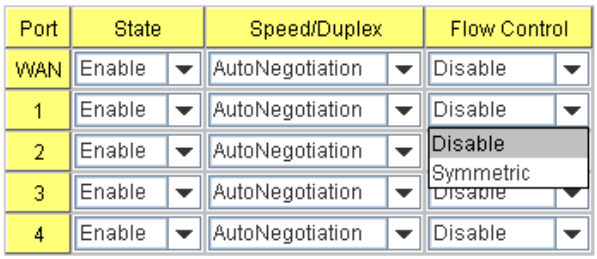


Snapshot 45: Switch port configuration| Port control| Speed/Duplex page of JetBox 9300/9310 Web UI

Flow control: JetBox 9300/9310 supports IEEE802.3x flow control in full duplex mode and back pressure in half duplex mode. Flow control is disabled as default. Choose symmetric to enable both flow control in full duplex mode and back pressure in half duplex mode.

IEEE802.3x flow control reduces network congestion on ports that are operating in **full duplex mode** using MAC Control PAUSE frames. When **symmetric** flow control is enabled, MAC transmitter sends flow control frames and MAC receiver interprets and processes incoming flow control frames.

Back Pressure in half duplex mode: When back pressure is enabled and no buffers are available to a port, the switch sends collision frames across the affected port and causes the transmitting station to resend the packets.



Snapshot 46: Switch port configuration| Port control| flow control page of the JetBox 9300/9310 Web UI

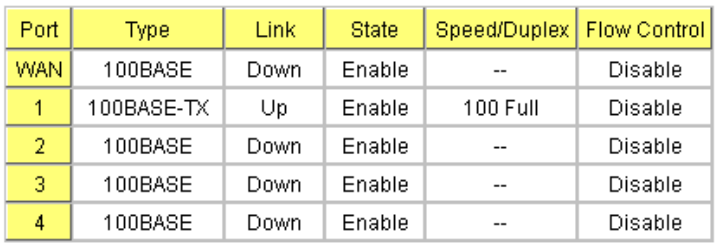
4-3-9-2 Port Status

You can check the settings (state, speed/duplex, flow control) of each Ethernet port and the link status and type here.

The Link and type item list

Type	Link	Description
100BASE	Down	No connection
100BASE-TX	Up	Fast Ethernet
10BASE-T	UP	Ethernet

Table 15 Port status| Link and type of JetBox 9300/9310



Port	Type	Link	State	Speed/Duplex	Flow Control
WAN	100BASE	Down	Enable	--	Disable
1	100BASE-TX	Up	Enable	100 Full	Disable
2	100BASE	Down	Enable	--	Disable
3	100BASE	Down	Enable	--	Disable
4	100BASE	Down	Enable	--	Disable

Snapshot 47: Switch port configuration| Port status page of the JetBox 9300/9310 Web UI

4-3-9-3 Port Statistics

You can check the statistic data for received (Rx) and transmitted (Tx) packets of each Ethernet port.

Press [Reload] to update the statistic data. Normally, the system updates the statistic data once every 30 seconds automatically.

Press [Clear all] to clean all the statistic data.

Port	Type	Link	State	Rx Good	Rx Bad	Tx Good	Collision
WAN	1000BASE	Down	Enable	--	--	--	--
1	100BASE-TX	Up	Enable	1023279	0	6783287	0
2	1000BASE	Down	Enable	--	--	--	--
3	1000BASE	Down	Enable	--	--	--	--
4	1000BASE	Down	Enable	--	--	--	--

Clear All Reload

Snapshot 48: Switch port configuration| Port statistics page of the JetBox 9300/9310 Web UI

⚠**Notice 8:** If bad packets count is increased, it means the network cable is not connected correctly or the network performance of the port is poor…etc. Please cross check your network environment.

4-4 Serial Port Configuration

JetBox 9300/9310 also provides perfect solution to manage serial devices via Ethernet in flexible ways, such as TCP server, TCP client, UDP, or Windows virtual COM. JetBox 9300/9310 creates a transparent gateway for the serial communication to Ethernet. If the control program uses network standard API, you can choose TCP or UDP as the communication protocol. If the control program uses COM port, you can install the Windows driver to add virtual COM ports.

Refer to JetBox Virtual COM Commander User Manual for details.

4-4-1 Serial Settings

You can configure the settings of the serial ports here.

Port and interface list

Port	RS232	RS422	RS485 (2 wires)	RS485 (4 wires)
COM1	Full			

COM2	Half			
COM3	Half	✔	✔	✔
COM4	Half	✔	✔	✔

Table 16: Serial setting| port and interface of JetBox 9300/9310

Baud Rate: The data rate in bits per second. And the port speed and device speed must match.

300 bps (bits per second)
1200 bps
2400 bps
4800 bps
9600 bps
19200 bps
38400 bps
57600 bps
115200 bps
230400 bps
460800 bps

Data Bits: The number of data bits in each character

5 (for Baudot code)
6 (rarely used)
7 (for true ASCII)
8 (for any kind of data, as this matches the size of a byte)

Stop Bits: Stop bits sent at the end of every character. The receiving device detects the end of a character and to resynchronize with the character stream.

1
2(1.5)

Parity: This is a method that sends an extra bit with each data character for detecting some errors in transmission.

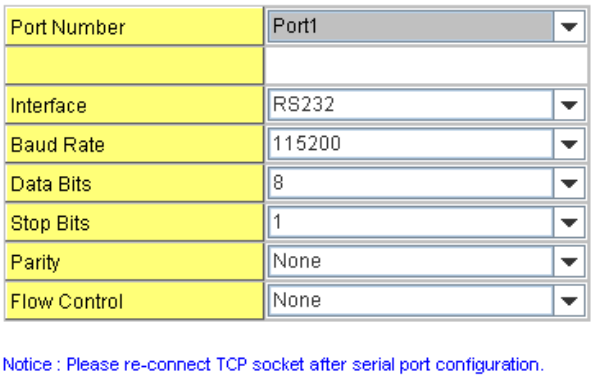
None no parity bit is sent
Even: The number of each character, including the parity bit, is always even.
Odd: The number of each character, including the parity bit, is always odd.
Mark: The parity bit is always set to the mark signal condition
Space: The parity bit is always set to the space signal condition

Flow Control: The interface to pause and resume the transmission of data.

None

Hardware: Use hardware handshake signals for flow control.

Xon/Xoff: The Xon/Xoff characters are sent by the receiver to the sender for flow control.

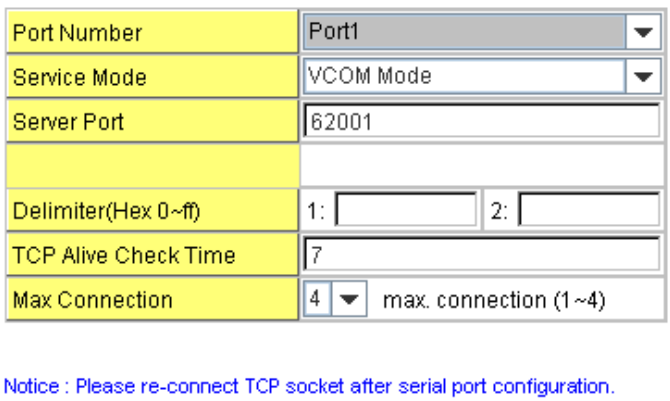


Snapshot 49: Serial port configuration| Serial setting page of JetBox 9300/9310 Web UI

⚠**Notice 9:** Please reconnect all the attached serial devices to the JetBox 9300/9310 once you change the setting of any serial ports of JetBox 9300/9310, especially under TCP server or VCOM mode of JetBox 9300/9310 serial ports.

4-4-2 Service Mode

You can change Service Mode here. JetBox provides the communication over Ethernet to serial devices by using TCP/IP or UDP/IP.



Snapshot 50: Serial port configuration| Service mode page of the JetBox 9300/9310 Web UI

⚠**Notice 10:** TCP server and client modes do not support RFC2217, so the hardware flow control cannot work properly.

Server Port or Listen Port

The TCP/UDP port defines a communication port number. In all modes of operating VCOM, TCP server, TCP client, and UDP, both the TCP/UDP client and server port settings must match. The default setting is

Port1: 62001

Port2: 62002

Port3: 62003

Port4: 62004

Idle Timeout

This item can be set to any value between 0~99 minutes. The default setting is 0 minutes. If communications are idle for a specified timeout value, JetBox will reset and make itself available for another connection.

Delimiter (Hex 0~ff) 1 & 2

These two items allow you to enter two ASCII characters in hex format that delimit the end of a message. When a message with both these delimiters is received at the serial port, the data contained in the serial buffer is placed in an Ethernet packet and set out the Ethernet port. The serial buffer is 1024 Byte.

TCP Alive Check Time

This item can be set to any value between 0 and 99 seconds. The default setting is 7 seconds. The server will monitor the TCP activity and reconnect if the server is disconnected for the length of time specified in this item.

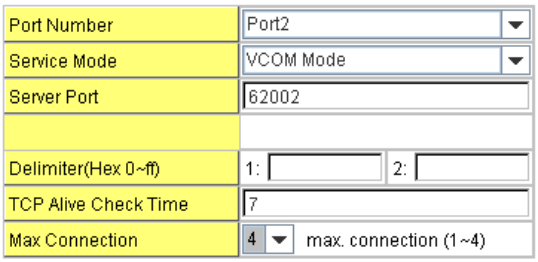
Max Connection

This item provides users up to 4 TCP connections.

4-4-2-1 VCOM Mode

Running JetBox Virtual COM Commander adds a COM port in the Device Manager of the operating system. This will provide traditional PC COM ports access to a serial

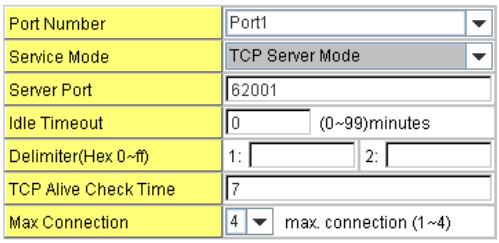
device anywhere on the LAN network. In this mode, JetBox acts as either TCP server with a designated communication port number. The Virtual COM driver is a TCP client.



Snapshot 51: Serial port configuration| Service mode| VCOM mode of JetBox 9300/9310 Web UI

4-4-2-2 TCP Server Mode

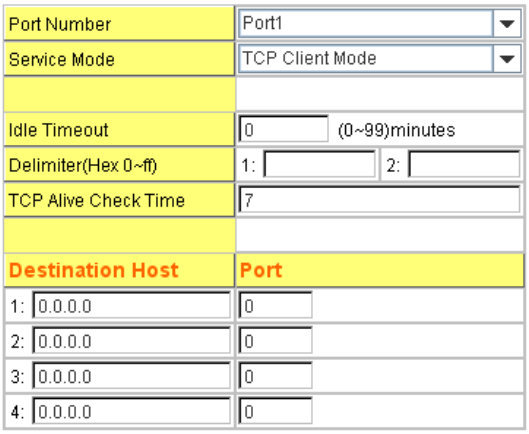
This mode is using TCP/IP network socket programs to communicate with the asynchronous serial port on JetBox. In this mode JetBox is configured to TCP server and the socket program running on the PC establishes a communication connection with JetBox. The raw data is sent directly to and from the serial port.



Snapshot 52: Serial port configuration| Service mode| TCP server mode of JetBox 9300/9310 Web UI

4-4-2-3 TCP Client Mode

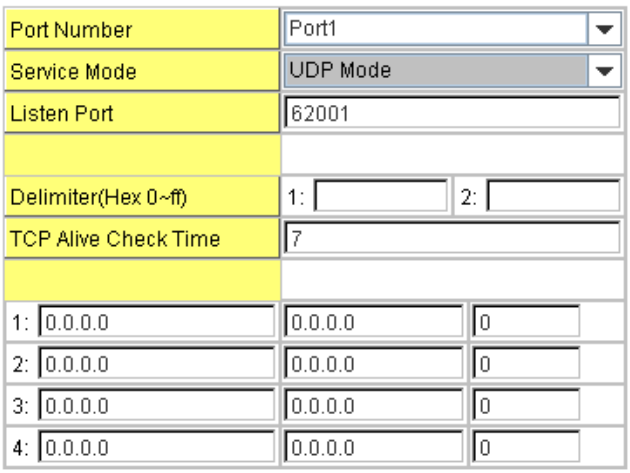
JetBox also can be configured as a TCP client. In this mode, JetBox builds up TCP connections to remote hosts and the hosts can receive and transmit data to and from the JetBox. TCP Client mode supports up to 4 simultaneous connections, allowing multiple hosts to communicate with the same serial device, at the same time.



Snapshot 53: Serial port configuration| Service mode| TCP client mode of the JetBox 9300/9310 Web Ui

4-4-2-4 **UDP Mode**

UDP provides faster transmission whereas TCP guarantees reliable communication with error checking. If the application does not require a UDP connection, selecting TCP is safer. In UDP mode JetBox can be configured to broadcast data to and receive data from multiple IP addresses. Four IP addresses are provided.



Snapshot 54: Serial port configuration| Service mode| UDP mode of JetBox 9300/9310 Web UI

4-4-2-5 **Paired Mode**

Any two dumb serial devices that can communicate with each other through a serial link will be able to communicate using two JetBoxes through LAN. Two JetBoxes are configured with, one setup as a TCP client, and the other to TCP server. When setting

up the Client, the remote IP address section must contain the address of the Server.

4-5 DIO Configuration

JetBox 9300/9310 use GPIO (General Purpose Input/Output) of CPU to provide four digital inputs and four digital outputs for device control.

The values of each digital input are low (0 volt) and high (2~5 volts). Maximum input current is 500 mA at 6.5 Voltage.

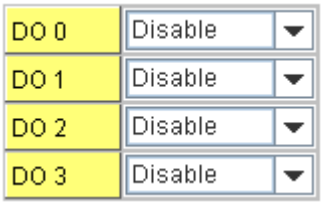
⚠**Notice 11:** Over voltage or over current for digital input will damage JetBox.

The values of each digital output are low (0 volt) and high (2.5 ~ 3.3 volts).

⚠**Notice 12:** Improper operation of DO might damage the opposite devices.

4-5-1 Digital Output Control

You can enable the DO as a high value, disable the DO as value low, or enable the DO based on scheduled time slots. Check the latest status of DO in DIO status page.

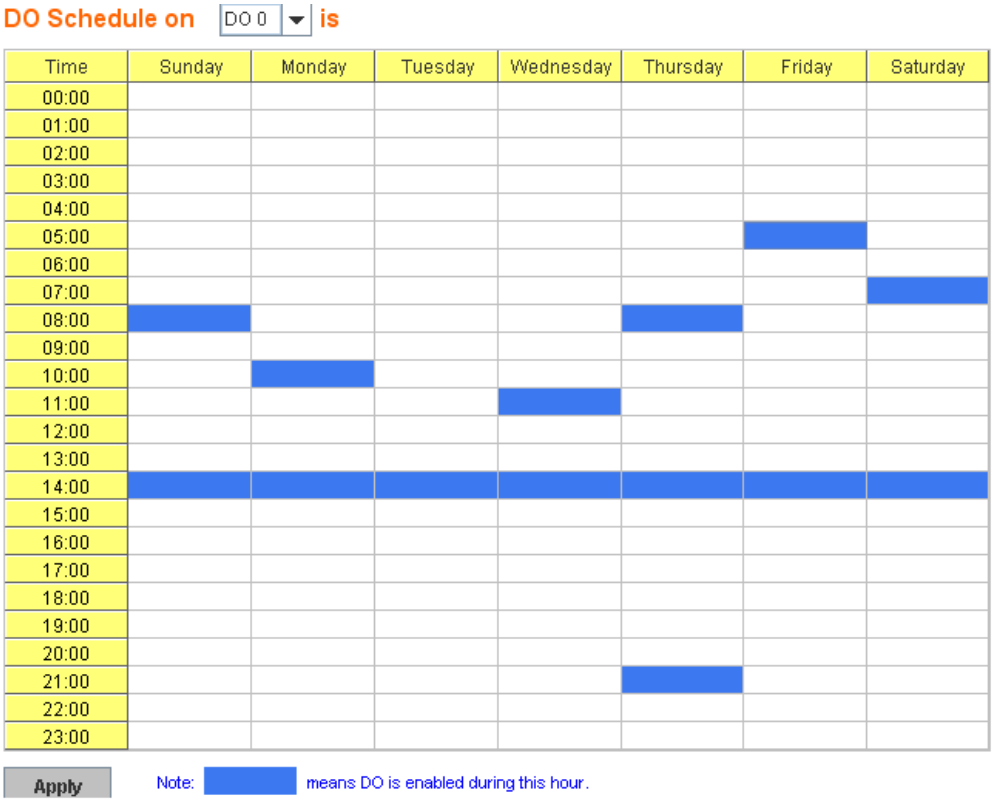


Snapshot 55: DIO configuration| Digital output control of the JetBox 9300/9310 Web UI

⚠**Notice 13** When JetBox 9300/9310 boots up, the status of Digital Outputs is set on High temporarily. It might cause attached devices status abnormal temporarily. After the system is ready, the status is back to the setting you made.

4-5-2 Digital Output Schedule

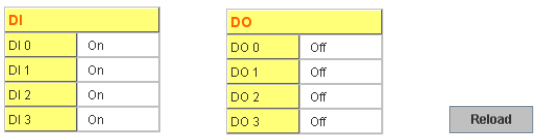
JetBox 9300/9310 also provides the flexibility on scheduled digital output control. You can set a time table to enable the digital outputs by clicking the time slot fields.



Snapshot 56: DIO configuration| Digital output control of the JetBox 9300 Web UI

4-5-3 DIO Status

You can check the latest DIO status here. Press [reload] to update the DIO status. Generally, the system updates the DIO status once every 30 seconds automatically.



Snapshot 57: DIO configuration| DIO status of the JetBox 9300/9310 Web UI

4-6 Power over Ethernet (JetBox 9310 Supported)

Power over Ethernet is a useful technology for powering devices where it would be inconvenient, expensive or infeasible to supply power separately. JetBox 9310 refers to IEEE802.3af standard as a PSE (Power Sourcing Equipment) to provide 48 volts DC over two of the four available pairs on a Cat 3/Cat 5e/Cat 6 cables with a maximum

current of 400 mA and a maximum load power of 15.4W.

The IEEE802.3af standard describes two types of devices: PSE (Power Sourcing Equipment) and PD (Powered Devices). PSE provides power to the PDs.

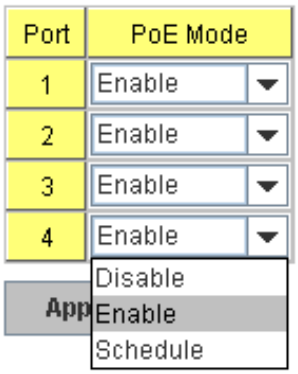
PD classification: detection, class ID 0~3 follow IEEE802.3af standard
PIN assignment (RJ45 connector): V+ (Pin 4,5), V- (Pin 7,8), Tx (Pin 1,2), Rx (Pin 3,6)

You can refer to Korenix's "Power Over Ethernet" White paper for PoE introduction.

4-6-1 PoE Control

For each PoE port, you can enable, disable, or enable based on scheduled time slots. Check the latest status of DO in DIO status page.

⚠**Notice 14:** When the PoE ports are enabled, they power devices based on correct PoE connections and conditions. When PoE ports are enabled and power devices, the PoE indicators in the front panel of the JetBox 9310 will show a solid green color and the status in the PoE status page shows on.



Snapshot 58: Power over Ethernet| PoE control of JetBox 9310 Web UI

4-6-2 PoE Schedule

JetBox 9300/9310 also provides the flexibility on scheduled PoE control. You can set a time table to enable the PoE ports by clicking the time slot fields.

Snapshot 59: Power over Ethernet| PoE schedule of JetBox 9310 Web UI

4-6-3 PoE Status

You can check the latest status for PoE ports.

PoE Mode: disable, enable, schedule
Status: When PoE ports are enabled, the status is on if the PoE ports power devices or the status is off if the PoE ports do not power any devices.
Consumption(W): The PoE port provides to a PD, between 0 and 15.4W
Voltage(V): The PoE port provides to a PD, between 44V and 48V
Current(mA): The PoE port provides to a PD, between 0 and 425mA

Press [Reload] to get the latest PoE status. Generally, the system updates the PoE status once every 30 seconds automatically.

Port	PoE Mode	Status	Consumption(W)	Voltage(V)	Current(mA)
1	Enable	Off			
2	Enable	Off			
3	Enable	Off			
4	Enable	On	3.87W	45.1V	86mA

Reload

Snapshot 60: Power over Ethernet| PoE status of JetBox 9310 Web UI

4-7 Backup and Restore

You can back up the configuration of the Web UI into the system flash, SD card or USB storage and also restore the backup file into the JetBox 9300/9310 when the JetBox 9300/9310 need to go back to a previous configuration.

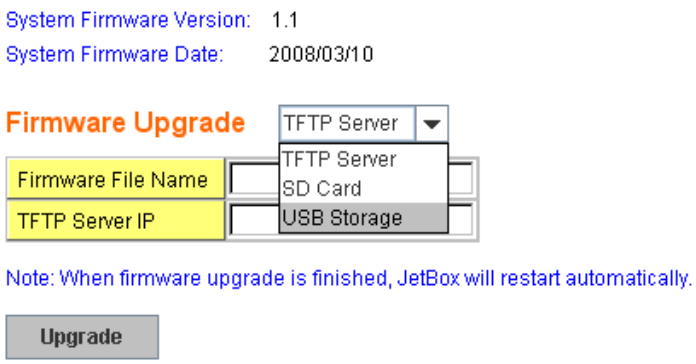
For both JetBox 9300 and 9310, The backup file in the SD card or USB storage is named as **jb9300.cnf** and it's located under the root directory.

Snapshot 61: Backup and restore| backup configuration of the JetBox 9300/9310 Web UI

Snapshot 62: Backup and restore| Restore configuration of the JetBox 9300/9310 Web UI

4-8 Firmware Upgrade

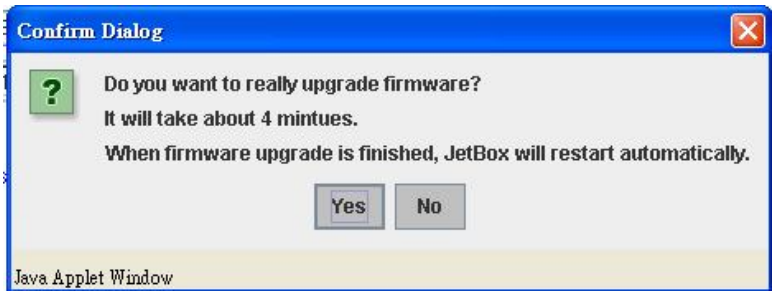
There are three ways to upgrade the JetBox 9300/9310 firmware, through TFTP server, through a SD card, or through a USB flash storage.



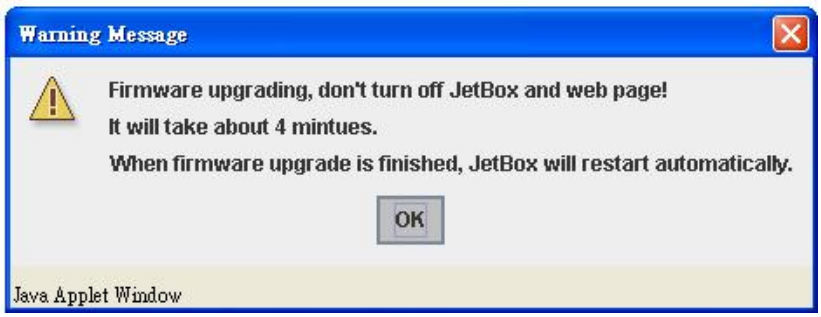
Snapshot 63: Firmware upgrade page of JetBox 9300/9310

Firmware File name: Both JetBox 9300 and 9310 use the same system file, so the firmware file name is **9310-vBB.bin**. "vBB" means SW version. For example, jb9310-v12.bin means v1.2 SW of JetBox 9300 and 9310.

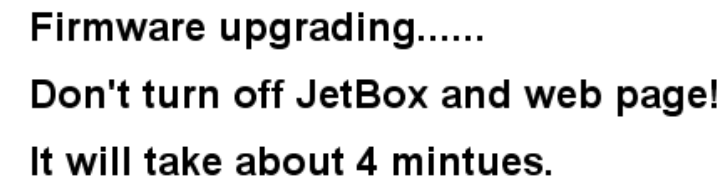
⚠**Notice 15:** When you upgrade the JetBox 9300/9310 firmware, it takes a few minutes depending on the file size. After the firmware upgrade is finished, JetBox 9300/9310 will restart automatically. Do not turn off the JetBox 9300/9310 and its web UI during firmware upgrading; otherwise it will cause an abnormal situation.


Confirm Dialog
Do you want to really upgrade firmware?
It will take about 4 mintues.
When firmware upgrade is finished, JetBox will restart automatically.
Yes
No
Java Applet Window

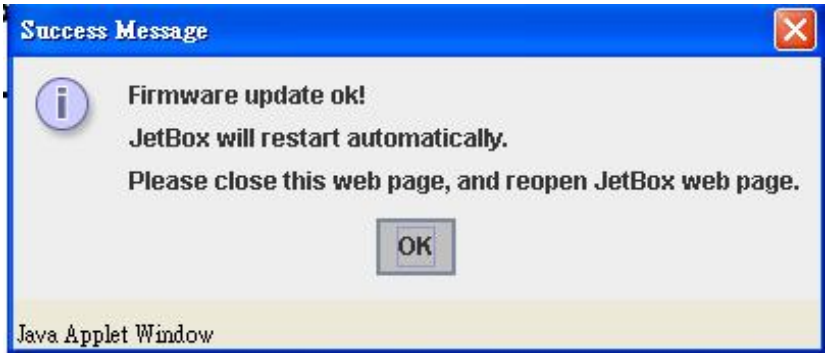
Snapshot 64: Reminder message for firmware upgrade in the JetBox 9300/9310 Web UI


Warning Message
Firmware upgrading, don't turn off JetBox and web page!
It will take about 4 mintues.
When firmware upgrade is finished, JetBox will restart automatically.
OK
Java Applet Window

Snapshot 65: Warning message of upgrading firmware in the JetBox 9300/9310 Web UI

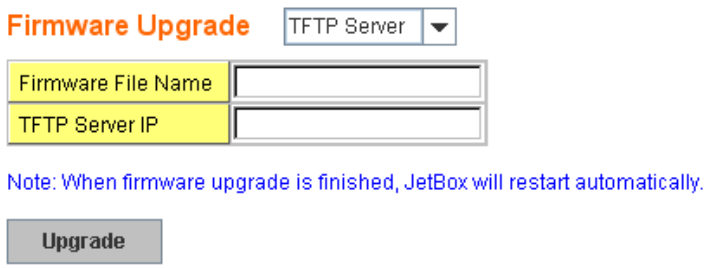


Snapshot 66: Firmware upgrading message of the JetBox 9300/9310 Web UI



Snapshot 67: Success message of firmware upgrade in JetBox 9300/9310 Web UI

If you want to upgrade the firmware through TFTP server, put the firmware file in your TFTP server, enter the firmware file name and the TFTP server IP, and then press [Upgrade].



Snapshot 68: Firmware upgrade| TFTP server of JetBox 9300/9310 Web UI

If you want to upgrade firmware through a SD card or a USB flash storage, put the firmware file under the root directory of the SD card or the USB flash storage, insert the SD card or the USB storage into the JetBox 9300/9310, enter the firmware file name in the JetBox 9300/9310 Web UI, and press [Upgrade].

⚠**Notice 16:** When you upgrade the JetBox 9300/9310 firmware through a SD card or an USB storage, the system will mount the SD card or the USB storage into the JetBox 9300/9310, execute the firmware upgrade, and then unmount the SD card or the USB storage.

⚠**Notice 17:** You need to go to the JetBox 9300/9310 Linux environment for other SD card or USB storage usage. In the Web UI or CLI, the SD card or the USB storage function is to upgrade firmware only.

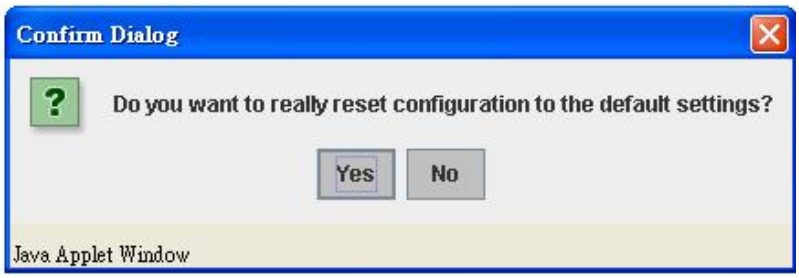
Snapshot 69: Firmware upgrade| USB storage of JetBox 9300/9310

4-9 Factory Default

You can reset the JetBox 9300/9310 back to factory default. Press [Reset] to reset all configurations back to the factory default. After reset, you need to restart the JetBox 9300/9310 to make the factory default configuration effective.

⚠**Notice 18:** You can also use the reset button in the JetBox 9300/9310 front panel to reset the system. Hold the button for 3 seconds on the reset button to go back to the last configuration. Hold the button for 7 seconds on the reset button to go back to the factory default configuration.

Snapshot 70: Factory default page of the JetBox 9300/9310 Web UI



Snapshot 71: Reminding message for resetting to factory default in the JetBox 9300/9310 Web UI

Snapshot 72: Success message for resetting to factory default in the JetBox 9300/9310

4-10 System Reboot

Press [Reboot] to restart JetBox 9300/9310.

Snapshot 73: System Reboot page of JetBox 9300/9310 Web UI

4-11 Save

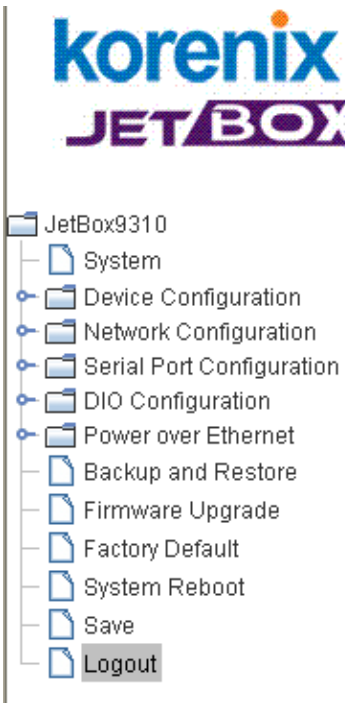
Press [Save to Flash] to save current configuration into the system flash. After the current configuration is saved, a success message pops out.

Snapshot 74: Save to Flash page of JetBox 9300/9310 Web UI

Snapshot 75: Success message of saving configuration to flash in the JetBox 9300/9310 Web UI

4-12 Logout

Click the logout item of the JetBox 9300/9310 SW menu tree, a reminder message pops out, press [yes] in the reminder message to log out of the JetBox 9300/9310 Web UI.



Snapshot 76: SW menu tree| Logout of the JetBox 9300/9310 Web UI

Snapshot 77: Reminder message for logout in JetBox 9300/9310 Web UI

Chapter 5 Software Features—Command Line Interface

You can have an overview of CLI architecture through the menu tree and refer the function description of the Web UI for CLI manipulation.

5-1 CLI menu tree

basic Setting
- Device Setting
  - System information
  - DeviceName
  - DeviceLocation
  - DeviceContact
- admin Password
  - User Name
  - Password
- System Time
  - Local Time
  - NTP Server
    - NTP Server IP1
    - NTP Server IP2
    - Enable
    - Disable
    - Status
  - Time Zone
  - Daylight Saving Status

- Enable Daylight Saving
- Disable Daylight Saving
- Daylight Saving Status

EthernetConfiguration

- WAN IP Configuration
  - Static IP
    - Address
    - Mask
    - Gateway
    - DNS1
    - DNS2
    - Status
  - PPPoE
    - User Name
    - Password
  - DHCP Client
  - IP Mode Status
- LAN IP Configuration
  - DHCP Client
  - Static IP
    - Address
    - Mask
    - Gateway
    - Status
  - IP Mode Status
- NAT setting
  - Masquerade
    - On
    - Off
  - DMZ
    - On
    - Off
  - PPTP
    - On
    - Off
  - L2TP
    - On
    - Off

- IPSEC
  - On
  - Off
- Status

DHCP Server
- Status
- Low IP Addr
- High IP Addr
- Mask
- Gateway
- DNS
- Lease Time
- Enable
- Disable
- Dump Lease

SwitchPortConfiguration
- Port Control
  - WAN Port
  - Port 1
  - Port 2
  - Port 3
  - Port 4
    - Port Status
      - Off
      - ON
    - Speed
      - 10M
      - 100M
    - Duplex
      - Half
      - Full
    - Flow Control
      - Disable
      - Symmetric
      - Status
    - Auto Negotiation
      - ON
      - Off

- portStatus
  - WAN Port
  - Port 1
  - Port 2
  - Port 3
  - Port 4
    - Type
    - Link
    - State
    - Speed
    - Duplex
    - FlowCtrl
- Port Statistic
  - WAN Port
  - Port 1
  - Port 2
  - Port 3
  - Port 4
    - Show Counter
    - Reset Counter
- VLAN
  - WAN Port
  - Port 1
  - Port 2
  - Port 3
  - Port 4
    - Status
    - PVID
    - Tag
      - Unmodified
      - Untag
      - Tag
    - Member
- Traffic Prioritization
  - QoS Policy
    - Queue Scheduling
      - Weighted
      - Strict

- WAN Port
- Port 1
- Port 2
- Port 3
- Port 4
  - Priority
  - Trust Mode
    - Port Based
    - CoS Only
    - DSCP Only
    - DSCP First
    - CoS First
- QoS CoS
  - Queue ID and CoS ID
- QoS DSCP
  - Queue ID and CoS ID
- Status

PoE

- Port 1
- Port 2
- Port 3
- Port 4
  - PoE Control
    - ON
    - OFF
    - Schedule
    - Status
  - PoE Schedule
    - EnableHourOnSunday
    - EnableHourOnMonday
    - EnableHourOnTuesday
    - EnableHourOnWednesday
    - EnableHourOnThursday
    - EnableHourOnFriday
    - EnableHourOnSaturday
    - Status
  - PoE Status

Serial

- Serial Setting
  - Port 1
  - Port 2
  - Port 3
  - Port 4
    - Baud Rate
      - 300
      - 1200
      - 2400
      - 4800
      - 9600
      - 19200
      - 38400
      - 57600
      - 115200
      - 230400
      - 460800
    - Data Bits
      - 5
      - 6
      - 7
      - 8
    - Stop Bits
      - 1
      - 2
    - Parity
      - None
      - Odd
      - Even
      - Mark
      - Space
    - Flow Control
      - None
      - Hardware
      - Xon Xoff
    - Status
    - Apply
- Service Mode

- Port 1
- Port 2
- Port 3
- Port 4
    - Virtual COM Mode
        - Server Port
        - Max Connection
        - Status
    - TCP Server Mode
        - Server Port
        - Max Connection
        - Idle Timeout
        - Status
    - TCP Client Mode
        - Destination host1
        - Destination host2
        - Destination host3
        - Destination host4
            - IP String
            - Port String
        - Idle Timeout
        - Status
    - UCP Mode
        - Listen
        - Host IP1
        - Host IP2
        - Host IP3
        - Host IP4
            - Start IP
            - End IP
            - Send Port
        - Status
    - Delimiter
        - Pattern 1
        - Pattern 2
        - Delimiter 1 ON
        - Delimiter 2 OFF
        - Delimiter 1 ON

- Delimiter 2 OFF
- Status
- TCP Alive Check Timeout
  - Configure
  - Status

DIO Setting

- DIO Status
- DO Configure
  - Port 0
  - Port 1
  - Port 2
  - Port 3
    - DO Schedule
      - EnableHourOnSunday
      - EnableHourOnMonday
      - EnableHourOnTuesday
      - EnableHourOnWednesday
      - EnableHourOnThursday
      - EnableHourOnFriday
      - EnableHourOnSaturday
      - Status
    - Activity
      - Force ON
      - Force OFF
      - Scheduling
      - Status

SNMP

- SNMP V2c Communication
  - Community 1
  - Community 2
  - Community 3
  - Community 4
    - Community String
    - Privilege
      - Read Only
      - Read Write
  - Status
- SNMP V3 User

- User Add
- User Delete
- Status
- SNMP Trap Server
  - IP Address
  - Communication
  - Version
    - Version 1
    - Version 2c
  - Status
  - Enable
  - Disable

Security

- IP Access Blocking Status
- Add Blocking IP
- Remove Blocking IP
- Enable IP Blocking
- Disable IP Blocking

Warning

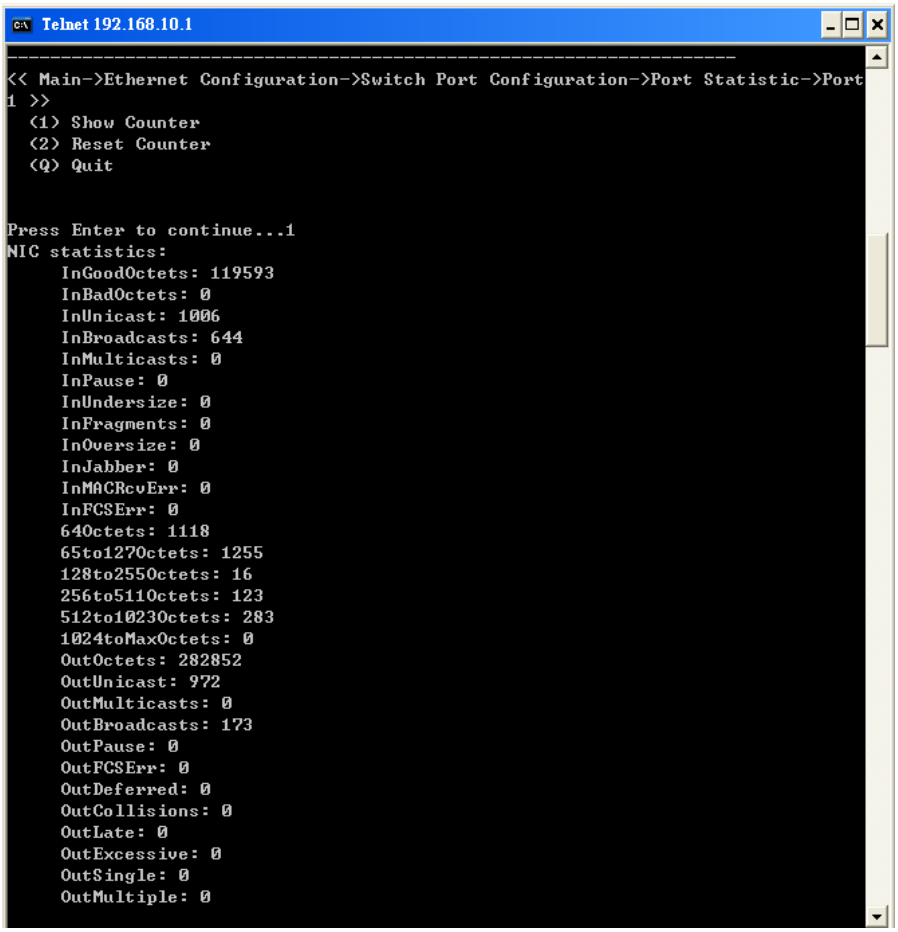
- Event Selection
  - Cold Start
  - Warm Start
  - Ethernet Link Status Change
  - DCD/DSR Status Change
  - Authentication Failure
  - Status
- SMTP Configuration
  - Server IP Address
  - Mail Account
  - Authentication
    - Enable
    - Disable
  - User Name
  - Password
  - Receive mail Address 1
  - Receive mail Address 2
  - Receive mail Address 3
  - Receive mail Address 4Status

- Enable
- Disable
- System Log
  - Configuration
    - Syslog Mode
      - Disable
      - Local Only
      - Remote Only
      - Local and Remote
    - Remote Server Address
    - Status
  - Show Event logs
- Backup and Restore
  - Backup to
    - System
    - SD card
    - USB Storage
  - Restore from
    - System
    - SD card
    - USB Storage
  - Autorun Update
- System Upgrade
  - Local File Mode
    - Update Location
      - SD card
      - USB
    - UpdateFileName
    - UpdateStatus
  - TFTP Server Mode
    - Fireware File Name
    - TFTP server IP
  - SD card
  - USB Storage
- systemReboot
- factoryDefault
- save

5-2 Difference between Web UI & CLI

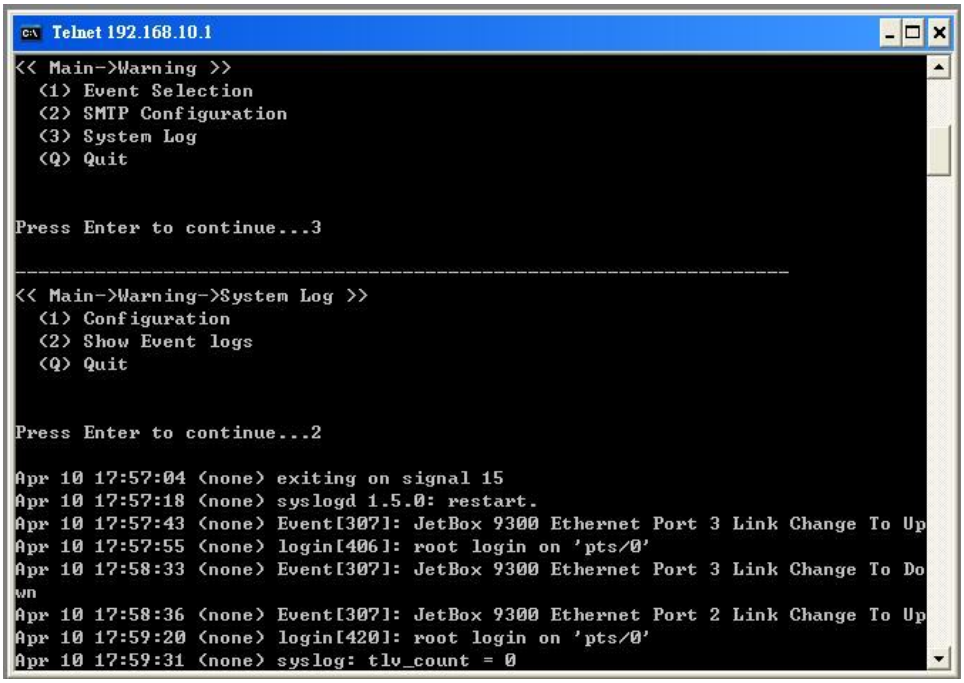
In order to keep a user friendly manipulation in the JetBox 9300/9310 Web UI, some functions could only be operated in CLI.

5-2-1 Port statistics: more counters are supported in CLI



Snapshot 78: Port statistics of the JetBox 9300/9310 CLI

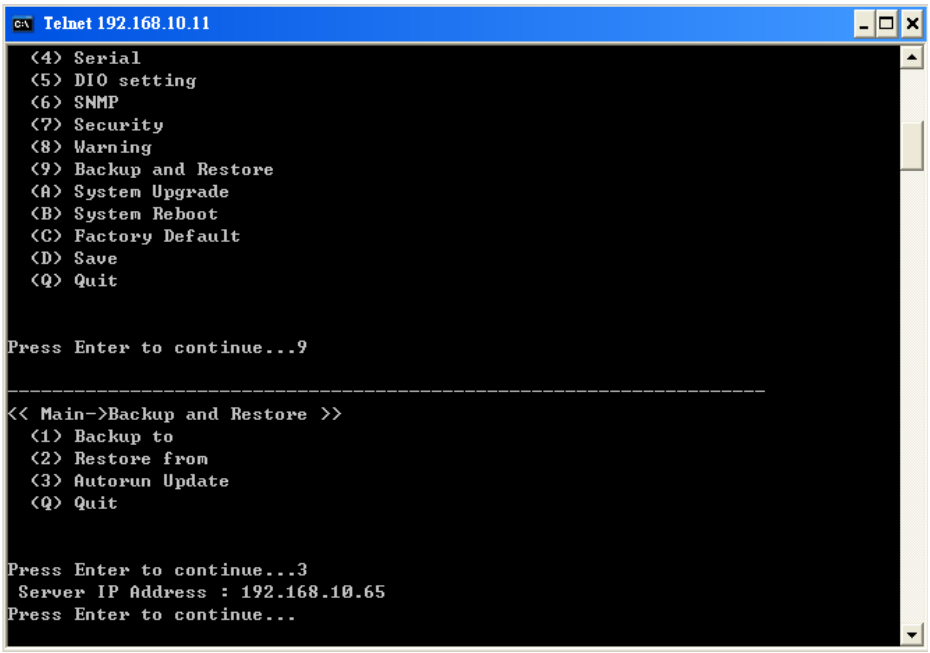
5-2-2 Syslog display: Only CLI has syslog display item.


Telnet 192.168.10.1
<< Main->Warning >>
(1) Event Selection
(2) SMTP Configuration
(3) System Log
(Q) Quit
Press Enter to continue...3
<< Main->Warning->System Log >>
(1) Configuration
(2) Show Event logs
(Q) Quit
Press Enter to continue...2
Apr 10 17:57:04 (none) exiting on signal 15
Apr 10 17:57:18 (none) syslogd 1.5.0: restart.
Apr 10 17:57:43 (none) Event[307]: JetBox 9300 Ethernet Port 3 Link Change To Up
Apr 10 17:57:55 (none) login[406]: root login on 'pts/0'
Apr 10 17:58:33 (none) Event[307]: JetBox 9300 Ethernet Port 3 Link Change To Down
Apr 10 17:58:36 (none) Event[307]: JetBox 9300 Ethernet Port 2 Link Change To Up
Apr 10 17:59:20 (none) login[420]: root login on 'pts/0'
Apr 10 17:59:31 (none) syslog: tlv_count = 0

Snapshot 79: Syslog display of JetBox 9300/9310 CLI

5-2-3 Autorun.sh update

After SW1.3 release, the JetBox provides the autorun function and the autorun.sh file can be updated through TFTP server.



Snapshot 80: Autorun.sh update of JetBox 9300/9310 CLI

⚠**Notice 19:** Please refer to **autorun user manual** for autorun function details.

Chapter 6 SNMP MIB

JetBox 9300/9310 provides the SNMP private MIB in the enclosed CD in the package. Before viewing the private MIB of the JetBox 9300/9310, you need to compile the private MIB files into your MIB browser.

Refer to 4-3-7 SNMP for more description.

Following is a partial description of the JetBox 9300/9310 private MIB.

==========

JetBox9300 DEFINITIONS ::= BEGIN

IMPORTS

internet FROM RFC1155-SMI

RowStatus, DisplayString, MacAddress, TimeInterval FROM SNMPv2-TC ;

```
private                 OBJECT IDENTIFIER ::= { internet 4 }
enterprises             OBJECT IDENTIFIER ::= { private 1 }
korenix                 OBJECT IDENTIFIER ::= { enterprises 24062 }
products                OBJECT IDENTIFIER ::= { korenix 2 }
jetBox                  OBJECT IDENTIFIER ::= { products 8 }
jetbox9300/jetbox9310           OBJECT IDENTIFIER ::= { jetBox 1 }
-- ------------------------------------------------------------------------



contact MODULE-IDENTITY
        LAST-UPDATED "0802200000Z"
        ORGANIZATION "Korenix Technology, Inc."
        CONTACT-INFO "korenix Technology, Inc.
                      F8-1, No. 98, Ming-Chuan Rd., Shing Tien City, Taipei, Taiwan
                      Tel:+886-2-82193000    Fax:+886-2-82193300
                      Business service : sales@korenix.com
                      Customer service: koreCARE@korenix.com"
        DESCRIPTION   "The MIB module for Korenix JetBox9300/JetBox9310"
        REVISION      "0802200000Z"
        DESCRIPTION   "version 1.2"
        ::= { korenix 1 }

basicSetting                OBJECT IDENTIFIER ::= { jetbox9300/jetbox9310 1 }
ethernetConfiguration       OBJECT IDENTIFIER ::= { jetbox9300/jetbox9310 2 }
poe                                 OBJECT IDENTIFIER ::= { jetbox9300/jetbox9310 3 }
serial                      OBJECT IDENTIFIER ::= { jetbox9300/jetbox9310 4 }
dioSetting                  OBJECT IDENTIFIER ::= { jetbox9300/jetbox9310 5 }
snmp                        OBJECT IDENTIFIER ::= { jetbox9300/jetbox9310 6 }
security                    OBJECT IDENTIFIER ::= { jetbox9300/jetbox9310 7 }
warning                         OBJECT IDENTIFIER ::= { jetbox9300/jetbox9310 8 }
backupAndRestore            OBJECT IDENTIFIER ::= { jetbox9300/jetbox9310 9 }
systemUpdate                OBJECT IDENTIFIER ::= { jetbox9300/jetbox9310 10 }
systemReboot                OBJECT IDENTIFIER ::= { jetbox9300/jetbox9310 11 }
factoryDefault          OBJECT IDENTIFIER ::= { jetbox9300/jetbox9310 12 }
save                        OBJECT IDENTIFIER ::= { jetbox9300/jetbox9310 13 }
```

```
-- ------------------------------------------------------------------------
-- BasicSetting
-- ------------------------------------------------------------------------

deviceSetting               OBJECT IDENTIFIER ::= { basicSetting 1 }
adminPassword               OBJECT IDENTIFIER ::= { basicSetting 2 }
systemTime                  OBJECT IDENTIFIER ::= { basicSetting 3 }

-- ------------------------------------------------------------------------
-- deviceSetting
-- ------------------------------------------------------------------------

deviceSettingDeviceName OBJECT-TYPE
        SYNTAX          DisplayString (SIZE (1..256))
        ACCESS          read-write
        STATUS          current
        DESCRIPTION "An administratively-assigned name for this managed node. By
                     convention, this is the node's fully-qualified domain name."
        ::= { deviceSetting 1 }

deviceSettingDeivceContact OBJECT-TYPE
        SYNTAX          DisplayString (SIZE (1..256))
        ACCESS          read-write
        STATUS          current
            DESCRIPTION "The textual identification of the contact person for this
                     managed node, together with information on how to contact
                     this person."
        ::= { deviceSetting 2 }

deviceSettingFirmwareVersion OBJECT-TYPE
        SYNTAX          DisplayString (SIZE (1..256))
        ACCESS          read-only
        STATUS          current
        DESCRIPTION     "Firmware version of the device."
        ::= { deviceSetting 3 }

deviceSettingMacAddress OBJECT-TYPE
        SYNTAX          DisplayString (SIZE (1..256))
```

```
        ACCESS          read-only
        STATUS          current
        DESCRIPTION "The MAC address of this device. An Media Access Control
                    address (MAC address) is a unique identifier attached to
                    most network adapters (NICs). It is a number that acts
                    like a name for a particular network adapter"

        ::= { deviceSetting 4 }

deviceSettingDescription OBJECT-TYPE
        SYNTAX          DisplayString (SIZE (1..256))
        ACCESS          read-only
        STATUS          current
        DESCRIPTION "A textual description of the entity. This value should
                    include the full name and version identification of the
                    system's hardware type, software operating-system, and
                    networking software. It is mandatory that this only contain
                    printable ASCII characters."
        ::= { deviceSetting 5 }

deviceSettingLocation OBJECT-TYPE
        SYNTAX          DisplayString (SIZE (1..256))
        ACCESS          read-write
        STATUS          current
        DESCRIPTION "The physical location of this node (e.g., telephone closet,
                    3rd floor')."
        ::= { deviceSetting 6 }

deviceSettingOID OBJECT-TYPE
        SYNTAX          DisplayString (SIZE (1..256))
        ACCESS          read-only
        STATUS          current
        DESCRIPTION ""
        ::= { deviceSetting 7 }
```

Chapter 7 Appendix

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Notice Index (JetBox 9300 limitations)

Notice 1: You can also use **Telnet** to connect to the JetBox 9300/9310 Linux environment. To login, you need another Login name and password. Kindly contact us for further inquiry. When you use the JetBox 9300/9310 Linux environment for some system modifications, the settings of the JetBox 9300/9310 Web UI and CLI might be changed and can't be used to control the JetBox 9300/9310 anymore. 10

Notice 2: JetBox 9300/9310 Web UI or CLI will time out if there is no activity for a long period of time, you will need to reconnect to the JetBox 9300/9310 Web UI or CLI. 12

Notice 3: When JetBox 9300/9310 works as a DHCP server to assign the IP addresses to the DHCP client devices connected to JetBox 9300/9310, it will cause IP address conflicts if there are any other devices connected to the JetBox 9300/9310 using static IP addresses that are within the same range. In this case, the same IP address might be used twice. 23

Notice 4: The maximum bandwidth of the routing is limited at 2M. 24

Notice 5: A untagged packet that enters one of the JetBox 9300/9310 Ethernet ports is inserted the PVID tag of that port and then the packet is forwarded to the corresponding VLAN members, exits the port and still keeps the PVID tag if you choose to un-modify for egress setting. If you want the egress packet without any tags, you must choose untagged for egress setting. 28

Notice 6: Before viewing the private MIB of JetBox 9300/9310, you need to compile the private MIB files into your MIB browser. 35

Notice 7: Most SNMP management applications use public and private as default community strings, so highly recommend you to change the community string for better network security of SNMP v1 and v2c. . 35

Notice 8: If bad packets count is increased, it means the network cable is not connected correctly or the network performance of the port is poor…etc. Please cross check your network environment. 42

Notice 9: Please reconnect all the attached serial devices to the JetBox 9300/9310 once you change the setting of any serial ports of JetBox 9300/9310, especially under TCP server or VCOM mode of JetBox 9300/9310 serial ports. 44

Notice 10: TCP server and client modes do not support RFC2217, so the

hardware flow control cannot work properly. 45
Notice 11: Over voltage or over current for digital input will damage JetBox. 48
Notice 12: Improper operation of DO might damage the opposite devices. 48
Notice 13 When JetBox 9300/9310 boots up, the status of Digital Outputs is set on High temporarily. It might cause attached devices status abnormal temporarily. After the system is ready, the status is back to the setting you made. 48
Notice 14: When the PoE ports are enabled, they power devices based on correct PoE connections and conditions. When PoE ports are enabled and power devices, the PoE indicators in the front panel of the JetBox 9310 will show a solid green color and the status in the PoE status page shows on. 50
Notice 15: When you upgrade the JetBox 9300/9310 firmware, it takes a few minutes depending on the file size. After the firmware upgrade is finished, JetBox 9300/9310 will restart automatically. Do not turn off the JetBox 9300/9310 and its web UI during firmware upgrading; otherwise it will cause an abnormal situation. 53
Notice 16: When you upgrade the JetBox 9300/9310 firmware through a SD card or an USB storage, the system will mount the SD card or the USB storage into the JetBox 9300/9310, execute the firmware upgrade, and then unmount the SD card or the USB storage. 55
Notice 17: You need to go to the JetBox 9300/9310 Linux environment for other SD card or USB storage usage. In the Web UI or CLI, the SD card or the USB storage function is to upgrade firmware only. 55
Notice 18: You can also use the reset button in the JetBox 9300/9310 front panel to reset the system. Hold the button for 3 seconds on the reset button to go back to the last configuration. Hold the button for 7 seconds on the reset button to go back to the factory default configuration. 55
Notice 19: Please refer to **autorun user manual** for autorun function details. 70

7-2 Revision History

Official release	Date	Description of Change

0.0.6	1-Jul-08	1. Add autorun.sh update description. 2. Modify IP security to IP access blocking. 3. Remove PoE over current protection
0.0.5	23-Apr-08	1. First official release

7-3 Customer Service

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